The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LXIII, No. 4 CHICAGO, ILLINOIS JULY 25, 1914

THE CEREBROSPINAL FLUID AS A PROBLEM IN INTRACRANIAL SURGERY *

CHARLES H. FRAZIER, M.D., Sc.D.
PHILADELPHIA

The rapid strides that have been made in the evolution of modern civilization are almost past man's understanding. To the casual observer, the progress of recent times is attributed hastily to the material contributions of the master minds of the industrial world; but a more careful analysis will lead the seeker after truth out of the turmoil and the noise and bustle of the busy centers of population into the seclusion of the laboratory, where, in the quiet of their academic atmosphere, the chemist and the physicist, the geologist and the agriculturist, the psychologist and the pedagogue, the bacteriologist and the physiologist are working out the problems which make it possible for the human race — men, women and children — to live where conditions compel them to work, and not be mowed down by the cruel operation of the law of the survival of the fittest.

Would it ever have been possible to combat this law of Nature were it not for the accomplishments of the scientist? Could the spirit of the philanthropist embodied in the social worker have made the congested districts inhabitable, had it not been for the science of preventive medicine? The application of scientific principles to agriculture will alone make it possible to feed the ever increasing population from the products of the soil. Was it the builder or contractor, or a disciple of the Taylor system of scientific efficiency that revolutionized the bricklaying industry, which had changed not one iota in all the centuries that have elapsed since the building of the pyramids until the present decade? Who would have dreamt at the time of the Spanish-American War that the dreadful sacrifice of countless lives might have been avoided by vaccination, or that the mortality of the infested zone of the Isthmus of Panama could be reduced below that of the wholesome surroundings of the rural districts of more northern climes?

Scientific discovery, the product of research, is the guiding-star in our modern civilization in matters of health and happiness, in conservation and productivity, in social welfare and social uplift. And what is true of all these is true, also, of the progress of surgery. It is not so long ago that the practical surgeon so-called looked with pity, if not with scorn, at the surgeon who endeavored to work out problems in the laboratory and not in the clinic. But who is there among you to-day that does not look with admiration and appreciation on the addition to knowledge that has been derived from the laboratories of Halsted, of Matas, of Crile, of Cushing, of Carrel and of Sweet? Through blundering errors and at the cost of human life the clinician may hit on truths which might have been solved at less cost in the experimental laboratory. Surgery has won its place as a scientific branch of medicine, and the hidden truths, on which will depend the progress of surgery as of all other human attainment, will be the product of the surgeon in his rôle of trained investigator.

The subject taken for the topic of this address is the cerebrospinal fluid as a factor in the problem of intracranial surgery. This topic is one of absorbing interest, as well as of great practical moment. It is one with which the surgeon must reckon in the diagnosis, the prognosis and the treatment of most intracranial lesions, and cannot be disregarded in any operative procedure. I shall present facts gleaned in part from literature, but in large measure from personal observations in the clinic and experimental laboratory.

Meningitis.—Illustrative of the part played by the cerebrospinal fluid in intracranial lesions, let us cite, for example, meningitis: its pathologic factors and its clinical syndrome. In meningitis there are two pathogenic factors: first, infection through the invading micro-organism, and, second, the increased intracranial tension. The increased tension in its clinical expression is analogous to the increased tension of sources other than infectious, as in cases of intracranial trauma and tumors. Whatever may be the nature of the infection or its effect on the meninges and cortex, there does exist a resulting increased tension in the cerebrospinal fluid and ultimately disturbance in its circulation and absorption. In their series of experiments, Kopetzky and Haynes demonstrated the analogy of experimentally induced increased intracranial tension and that due to infection of the meninges by pathogenic micro-organisms. While it is true that the fatal outcome of many cases of meningitis is due to the metabolic action of the particular micro-organism on the meninges and cortex with the production of certain toxins and ptomains, it is also true that in cases of otitic meningitis the progress of the disease has been arrested after drainage by ventricular puncture or lumbar puncture when the examination of the fluid failed to demonstrate the existence of micro-organisms.

In meningitis, then, there is an increase in cerebrospinal fluid and edema of the brain. There results an

* Chairman's address, read before the Section on Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, June, 1914.

increase in pressure which so interferes with the blood-supply that the function of the vasomotor, respiratory and cardiac centers is disturbed, and the alarming picture of intracranial pressure asserts itself. It is significant that this increased pressure is the determining factor, as often perhaps as the specific action of the bacteria. The part played by the cerebrospinal fluid in meningitis is, therefore, a major one and the treatment of meningitis should comprehend some means of controlling the intracranial pressure as well as the microbic activity.

Hydrocephalus.—The study of the physiology of the cerebrospinal fluid in relation to congenital hydrocephalus offers another fruitful field for study. In the two thousand years which have elapsed since Hippocrates first tapped the ventricles, not a substantial contribution has been made to the etiology of hydrocephalus. The question whether or not hydrocephalus is due to a lesion of the absorptive mechanism is, even to-day, absolutely in the domain of speculation. We are told that it may be due to traumatic or psychic disturbances during pregnancy, to toxic or infectious disease of the parent, such as alcoholism, tuberculosis or syphilis, or that there may be a degenerative process of the capillaries in the ventricular wall (Weber); but there has never yet been revealed by necropsy or otherwise a constant pathologic factor which gives us a clue as to the etiology, prevention or treatment. Despite the seriousness with which the originator of some new method of treating hydrocephalus takes himself, we feel almost like apologizing for the multiplicity and variety of surgical procedures that have from time to time been recommended, so many have been the disappointments, so many the failures.

Brain Tumors.—Again, the relation of cerebrospinal fluid to brain tumors is an absorbing topic. We attribute to the new growth those symptoms of brain tumor which are the result of increased intracranial tension, but, as a matter of fact, in most instances the increased intracranial tension is the result of the excessive accumulation of cerebrospinal fluid in the ventricles, in the basal cysternae, or throughout the subarachnoid space. Evidence of intracranial tension is absent when there is no excessive accumulation of fluid in the distended ventricles or the basal cysternae. I supported this statement with numerous illustrations from my clinic in a paper presented to the Philadelphia Neurological Society.[1] This general rule holds good whether the tumor be a glioma or an endothelioma; whether it be cortical, subcortical or basal. What is true of pretentorial lesions is true also of subtentorial lesions. The truth of this statement is readily demonstrated on the operating-table. If, with pretentorial tumors, there is excessive tension, the tension will subside when the cerebrospinal fluid is withdrawn by tapping directly the ventricles, or by lumbar puncture. Similarly, in posterior fossa tumors, the evacuation of fluid from the basal cysternae is invariably followed by the immediate decrease of tension.

The extraordinary rapidity with which the cerebrospinal fluid reaccumulates after evacuation is worthy of mention. I had an opportunity in a case of tumor to tap the ventricles through an opening in the skull on several occasions when I withdrew from 60 to 150 c.c. of cerebrospinal fluid, from two to five times the normal content of the ventricles, only to find the fluid replaced within the space of twenty minutes. Palliative treatment in the case of brain tumors becomes then a problem of dealing with the excessive accumulation of cerebrospinal fluid, and the important question at once arises: Shall temporal decompression as a palliative procedure be altogether supplanted by the Anton puncture of the ventricle through the corpus callosum? This method at once strikes at the root of the trouble and offers an outlet and an area of absorption for the fluid in the distended ventricles. In this manner, tension is relieved and a definite method adopted to prevent its immediate recurrence.

The cerebrospinal fluid was mentioned first by Coligno in 1764, who thought it present only after death, and later Haller found it in the spinal cord, but without realizing that there was any relation between the fluid in the cord and that in the ventricles. It was not until 1840 that the connection between the ventricles and the subarachnoid spaces was revealed by Magendie through his description of the foramen which bears his name.

Well known as are the physical characteristics of cerebrospinal fluid in health and their variation in disease, we are still in the dark as to its function, and as to the manner in which the secretory and absorptive balance is maintained in health, and is disturbed in disease. The cerebrospinal fluid has no analogy in the body; it is wholly different on the one hand from lymph and on the other from the liquid found in serous cavities, as of the pleura and peritoneum. Because of the communication between the perivascular sheaths and the pericellular and perineural spaces, there are some who believe that the cerebrospinal fluid plays a part in the nutrition of the brain cells.[2] Some regard it as a means whereby the delicate balance of intracranial pressure is preserved; others, again, as Dixon and Halliburton, believe that it affords the central nervous system an additional mechanism for eliminating carbon dioxid from the brain: as urea increases the renal flow, so carbon dioxid increases the cerebrospinal secretion. While we know that the cerebrospinal fluid is a secretion, we have at the same time found from repeated examination of fluid discharged in large quantities that the solids in the fluid diminish materially in quantity, so that there is reason for suspecting that under abnormal conditions the fluid may be of the nature of a transudation.

The cerebrospinal fluid fills all the space of the cranial cavity not occupied by the vessels and nerve-tissues; and, by equalizing pressure, adjusts the mechanism of the circulation of the nerve cells. Under normal conditions, we find the pressure registers 100 mm. of water, or with the mercury manometer, which I prefer, about 6 mm. Natural variations from the normal occur during inspiration and expiration, the former lowering, the latter raising it, as the blood is dammed back from the right auricle and vena cava into the cerebral sinuses. The pressure is believed by some to be equal to or a little greater than that of the venous pressure. This relation of cerebral venous pressure to the pressure of the cerebrospinal fluid, we have been able to demonstrate a number of times in our experiments. On clamping one internal jugular vein, there is no change in pressure, but when both veins are clamped, the pressure rises 20 mm. in five seconds. When both internal

1. Frazier, C. H.: New York Med. Jour., June 27, 1914.

2. This is still open to question, as His, Sicard and others believe that the true lymph channels of the brain are separate from the perivascular sheaths. (Ferrier: Lancet, London, Oct. 18, 1913.)

jugular veins are closed, and first one external jugular and then the other is clamped, the pressure rises 10 mm. and 40 mm., respectively, within ten seconds. This bald statement on the relation of the venous to the cerebrospinal pressure is of considerable import when taken in relation with the problems of absorption and confirms the observations which have been and are being made to prove that the greater part of the fluid is taken up by the venous, rather than by the lymph, channels.

THE PRODUCTION AND ABSORPTION OF THE FLUID

Every pathologic state of the cerebrospinal fluid implies an increase in quantity. So far as we know, there are no pathologic conditions in which the symptoms are the result of a diminution in quantity of cerebrospinal fluid, whereas, as we have already shown, there are many diseases in which the increase in fluid is a dominant factor. Any increase in fluid above the normal implies a disturbance of balance between absorption and secretion, so that an understanding of these two processes is essential before it will be possible to adjust the disturbed balance.

By the injection of various dyes into the subarachnoid space, we have been able to demonstrate positively that the lymphatic system plays a very insignificant part in the problem of absorption of the cerebrospinal fluid. One may trace the avenue of absorption through the nerve-sheaths, chiefly of the olfactory and optic nerves, thence to the posterior part of the eyeball, and to the mucous membrane of the turbinates and septum, to the posterior lymph-nodes of the nasopharynx, to the parotid and deeper cervical chain and thence to the thoracic duct. Usually, it took twelve hours for the stain to reach the lower glands. While, therefore, absorption does take place by the lymphatics, the course is roundabout and the process relatively slow.

A better method of studying absorption, we found in the use of phenolsulphonephthalein (an observation confirmed by the work of Dandy and Blackfan) which, when injected into the ventricles, appears in the torcular herophili in two minutes and in the veins in five minutes. As it takes almost twelve hours for the stained fluid to reach the cervical lymph-nodes and only five minutes for phenolsulphonephthalein to reach the veins, one sees that the cerebrospinal fluid is absorbed chiefly by the blood-channels.

Our studies of the process of absorption and secretion have been greatly facilitated through our producing an artificial hydrocephalus by blocking the fourth ventricle. If phenolsulphonephthalein is injected into a blocked ventricle, absorption is practically inhibited; even after two hours there appears only the slightest trace and this is not constant, whereas in the unobstructed ventricle the drug is recovered from the veins in five minutes. Furthermore, we have shown that from 50 to 60 per cent. of the amount of phenolsulphonephthalein injected may be recovered from the veins in two hours. Hence it is fair to assume that an equal quantity of cerebrospinal fluid may be absorbed in the same time.

While, therefore, it is an established fact that the cerebrospinal fluid escapes chiefly through the venous channels, one is still in doubt which of the veins or sinuses play the most important part. Key and Retzius asserted that the pacchionian bodies acted as filters, and, while this theory is not generally accepted because these bodies do not exist in very young children, the fact that hydrocephalus is more prevalent in infancy is at least suggestive to me that the pacchionian bodies play some part, be it large or small, in the absorptive process. Hill believes that the cerebrospinal fluid makes its escape from the veins opening into the longitudinal sinus between which and the subarachnoid space Adamkwiez claims there is a free communication. In relation to the part played by the longitudinal sinus, we found experimentally that when fluid was introduced under pressure into the cisterna magna of the posterior fossa, none of the fluid reached the cerebral cortex, and we attributed this phenomenon to the blocking of the isthmus of the tentorium cerebelli when the midbrain was forced upward by the artificial pressure. In this phenomenon, I take it, is an explanation of the greater frequency with which we find signs of increased intracranial tension in tumors of the posterior rather than of the anterior fossa. It is not of necessity the obstruction of the ventricles that causes their distention (for frequently the outlet to the ventricles is not blocked); but the distention is due to the interference with absorption that follows when the passage of the cerebrospinal fluid from the posterior fossa to the cerebral cortex is obstructed because the isthmus of the tentorium is blocked. Furthermore, the improvement which follows puncture of the corpus callosum, permitting the escape of cerebrospinal fluid directly from the dilated ventricle to the cerebral cortex, may be due to the greater facility with which the fluid may reach the longitudinal sinus.

The control of the production of cerebrospinal fluid is pregnant with possibilities, and the study of the formation of cerebrospinal fluid offers a fascinating problem for experimental research. Up to the present all therapeutic efforts have been directed toward finding an artificial outlet for the excessive fluid which accumulates in such diseases as serous meningitis, brain tumors and hydrocephalus. The meager results we know. I believe that the future may bring forth remedies which will deal with the problem of cerebrospinal fluid at its source, and control its output.

It is no longer a matter of speculation that the cerebrospinal fluid is the output of the cubical cells of the choroid plexus and is found within the ventricles, lateral, third and fourth. That it is a secretion has been proved by the histological evidence of Cavazzani, Mott and others, and is confirmed by the experimental data which I shall present.

Is it not true, then, that the choroid plexus must be looked on as a gland subject to a variety of influences like other glandular structures, some now well known, others to be revealed by continued research? The choroid has been described by Mott as a gland with an external secretion but with an internal destination—a mixed type of gland intermediate between a ductless gland and a gland with a duct; its formation being affected in an inverse manner, epithelial invagination for a gland with an excretory duct, ependymal invagination for the choroid plexus.

The suggestion of Stiles that ligation of the common carotid is an effective way of dealing with hydrocephalus implied that the activity of the choroid plexus or choroid *gland*, as I shall now call it, is diminished by limiting its blood-supply. If an analogy can be drawn between the thyroid and the choroid gland, Stiles' suggestion is not wholly illogical, since the control of hyperthyroidism by ligation of two thyroidal vessels is an undisputed fact. Unfortunately, however, this analogy of the two glands is not borne out

by either our laboratory or our clinical experience. We have been able to obtain readings of the normal flow of cerebrospinal fluid by a suitable apparatus, attached to a cannula introduced into the subarachnoid space through the occipito-atlantal ligaments, and with these as controls, observed the effect of various circulatory disturbances, clamping first one, then both common carotids, one and both internal jugular veins. Curiously enough, this interference with the larger vessels of the cerebral circulation had absolutely no retarding influence on the rate of secretion. This experimental evidence alone would seem sufficient to prove that the function of the choroid gland cannot be controlled by ligation as is that of the thyroid gland. But, as further evidence, I may refer to a clinical experience in the case of inoperable brain tumor with enormously distended ventricles. Decompression had failed to compensate for the tremendous increase in tension due to the distended ventricles, and an attempt was made prior to our laboratory investigation to influence the accumulation of fluid by gradual interruption of the carotid circulation. The ventricle was tapped before each ligation, and the time required for it to fill was noted. These observations were repeated after ligation, and the results were practically negative, in that after the withdrawal of from 100 to 150 c.c. of fluid before ligation and after ligation, the time required for the ventricle to refill was practically unchanged.

Further, continuing our search into the factors influencing the secretory activity of the choroid gland, we investigated the physiologic action of the saline extracts of certain glands, including the pancreas, spleen, kidney, testes, ovary, thymus, adrenals, liver and brain. Nearly all these, especially the spleen, liver, kidney and pancreas caused a greater or less fall in blood-pressure, and, coincident with this, a marked increase in the rate of flow of cerebrospinal fluid in proportion to the quantity of extract injected. Amyl nitrite produced a similar fall and a similar increase in the outflow of cerebrospinal fluid. Frequently, after this temporary increase, the rate of flow became slower or ceased altogether. This increase in the secretory output must be the result either of direct stimulation of the choroid gland or of the disturbance in blood-pressure. The fall of arterial pressure causes an increase in pressure and dilatation of the cerebral sinuses, which in turn forces the cerebrospinal fluid out of the ventricles. Further observations tended to confirm the latter theory rather than the theory of hypersecretion.

Some interesting facts have been brought out recently by Dixon and Halliburton,[3] who, with us, have been studying the effect of various substances on the cerebrospinal secretion. They found, for example, that pilocarpin caused a genuine increase in secretion, although they were doubtful whether it acted directly on the choroidal epithelium or its nervous mechanism. A slight increase followed the injection of brain extracts, but the most interesting of their observations was on the effect of an extract of the choroid gland. This caused a uniform increase in the cerebrospinal secretion. This increase is not due to altered vascular or respiratory conditions, but rather to the specific action of some substance on the secretory cells of the choroid gland. The precise nature of this substance is still undetermined, although, as Dixon and Halliburton suggest, it may be due to a hormone product of brain metabolism.

In beginning our experiments, we hoped to find a tissue or an extract which, when injected into the circulation, might have a retarding influence on the activity of the choroid gland. But, until recently, with all the substances investigated, the effect was a hypersecretion rather than a hyposecretion. It was not until we began to study the effects of the thyroid gland extract that we discovered a substance which had a specific inhibitory action on the choroid gland. When injected in sufficient quantities, the thyroid extract caused a temporary fall in blood-pressure, with the usual transitory increase in outflow of cerebrospinal fluid; but the significant and altogether unique effect was the prolonged period of decreased outflow which followed, for three or four hours, that is, to the end of the experiment. Even when such small doses as to cause little, if any, change in blood-pressure are injected, the diminution in the rate of choroid secretion is marked, so that we are led to the conclusion that the thyroid gland extract, when injected intravenously, has a specific inhibitory action on the choroid gland. We will continue these studies on the thyroid gland to determine which of its constituents is the responsible factor.

The cerebrospinal fluid, then, has an absorbing interest for the clinician. Not only must he reckon with it in the diagnosis of many intracranial diseases, but also he cannot ignore it when his constructive ingenuity may be taxed to devise measures of relief for such diseases. Of equal interest, however, are the problems of research for those who would reveal the secrets of the function of this fluid in which our brain cells are forever bathed.

1724 Spruce Street.

3. Dixon and Halliburton: Jour. Physiol., 1913-1914, xlvii, 213.

THE TREATMENT OF PLACENTA PRAEVIA *

EDWARD P. DAVIS, M.D.
PHILADELPHIA

In the advance which the science of obstetrics has made in the last fifteen years, this serious condition with others of like importance, has received new consideration, and some changes have been suggested in its treatment.

At present we recognize that septic infection is quite as important in causing the death of the mother as hemorrhage or shock. It has also been repeatedly demonstrated that placenta praevia causes such a vascular condition of the cervix and lower uterine segment that forcible dilatation or vaginal cesarean section exposes the patient to great danger from hemorrhage and infection. Furthermore, so grave a complication as placenta praevia demands hospital facilities and the skill of experienced hospital operators.

My experience leads me to agree with the conclusions just stated, and I desire, in addition, to present this subject to you from the following point of view: Logically, placenta praevia is a variety of ectopic gestation. The normal location of attachment of the impregnated ovum during its greatest period of devel-

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

opment is the wall of the upper expulsive segment of the uterus near the orifice of the fallopian tube from which it emerged. When the impregnated ovum remains in the graafian follicle, the fallopian tube or the upper wall of the uterus, its growth inevitably causes rupture and hemorrhage. The danger of septic infection, however, is primarily inconsiderable. When the impregnated ovum attaches itself below its usual site of development, hemorrhage is likewise inevitable because pregnancy must be terminated with dilatation of the cervix, and dilatation inevitably produces separation and bleeding. The danger of infection is equally great because pathogenic bacteria are frequently present in the vagina, and repeated examinations and manipulation must convey them to the placental site. Hence there are some conditions in favor of the patient with the upper variety of ectopic gestation as against the patient who has the low variety, or placenta praevia. From this point of view, that method of treatment will be most successful which controls hemorrhage with the minimum risk of infection.

Again, cases of placenta praevia may be, for purposes of treatment, divided into those in which hospital facilities are promptly obtained and those which are treated outside of hospital. In hospital cases, operations which the general practitioner cannot safely attempt may be undertaken with a fair chance of success. If ectopic pregnancy of the upper variety is of sufficient gravity to demand the services of a skilful operator, with hospital facilities if possible, ectopic gestation of the lower variety, or placenta praevia, is equally grave.

Let us consider first those cases which come under the care of the general practitioner of medicine and which cannot be conveyed to hospital.

Two important factors must be kept in mind under these circumstances:

1. Any vaginal hemorrhage in a pregnant woman is a symptom of danger and must not be neglected. Because hemorrhage from placenta praevia is accompanied by no pain, it is frequently neglected by patients.

2. In dealing with these cases the danger of infection must be kept prominently in view. Vaginal examinations and manipulation must be as infrequent as possible, and the use of the tampon should be avoided.

Without minute classification, placenta praevia may be divided into those cases in which the os is not entirely covered by placenta and in which the membranes can be reached, and those cases in which the membranes cannot be reached. In the hands of the general practitioner and in private houses, the best treatment in the first class of cases is to rupture the membranes as extensively as possible, when dilatation permits this maneuver. Tonic doses of strychnin are then given and the patient is allowed to deliver herself, or, at least, is made to force the presenting part down to the vulva before artificial delivery is undertaken. In this way hemorrhage and infection will be reduced to a minimum, and although the risk to the child is great the mother's safety should be first considered.

In complete placenta praevia, in the hands of the general practitioner in a private house, the Braxton-Hicks method of bringing down the leg and breech of the child as a plug should give the mother the best chance. To accomplish this, anesthesia, partial or complete, may be required. The placenta must be perforated by one or two fingers, combined version performed, and the leg seized and drawn through the placenta. Only sufficient traction should be made to bring the breech firmly into the pelvic cavity and against the cervix and placenta. Under no circumstances should forcible and immediate extraction be practiced. The life of the child should be disregarded in the interests of the mother. If a constant tension on the child is desired, a noose of bandage should be slipped about the child's ankle and a moderate weight attached. The mother may then be stimulated as required, care being taken to avoid the use of ergot and pituitary extract. Strychnin, atropin and digitalin hypodermatically, with salt solution injected into a vein or connective tissue, will be found especially useful. The mother demands constant observation until labor finally develops, and the fetus, if possible, is expelled spontaneously. In placenta praevia the practitioner must expect and be forewarned against post partum bleeding. The delivery of the child should be followed by the delivery of the placenta, irrigation of the uterus with a hot 1 per cent. dilution of liquor cresolis compositus or normal salt solution, and firm packing of the uterus, cervix and vagina with 10 per cent. iodoform gauze. If undue traction is avoided and spontaneous expulsion of the fetus secured, there will be no dangerous laceration of the cervix; but if undue violence has been employed the cervix may be severely torn, and severe or fatal hemorrhage may follow. Under these circumstances immediate suture of the cervix may be necessary.

In hospital practice, with the mother in good condition and the membranes available for rupture, the escape of the amniotic liquid may be followed by the introduction of a dilating bag through the rent in the membranes into the cavity of the amnion. This should be gradually distended to its fullest extent securing dilatation of the cervix with pressure on the placenta. When dilatation is sufficiently advanced the child may be delivered by forceps, in many cases advantageously, with a minimum risk to the mother and with a great reduction in fetal mortality.

When the membranes are not available for rupture, and when the cervix is resisting, because in a primipara it is poorly developed, or in a multipara has been altered by scar tissue from previous confinement, mother and child will obtain the best result by prompt resort to abdominal cesarean section. If the child is premature or dying or dead, from long-continued maternal hemorrhage, the placenta may be perforated by the fingers and combined version practiced and the child's body used as a plug to check maternal bleeding. Spontaneous delivery and uterine contraction must be secured in the manner already described.

If the child be living and in good condition, the cervix soft and dilatable, and the head presenting, with the patient in hospital, the obstetrician may elect to pierce the placenta and insert a dilating bag through it within the cavity of the amnion. This bag may be distended with antiseptic fluid, hemorrhage checked by pressure, and gradual dilatation of the cervix thus secured. With good dilatation the use of the forceps will sometimes secure a living child. In hospital practice, however, where the child is fully viable, mother and child will obtain the best results by abdominal cesarean section. At full term in hospital cases, whether the child be living or dead, the mother will obtain her best chance for recovery by the same

method. Our experience in abdominal cesarean section for placenta praevia comprises seventeen cases. In these the membranes were not available and the placenta practically covered the entire internal os. In some of these patients the child was dead or dying and the mother exsanguinated. All were at or near term.

The method of operation consisted in opening the abdomen, turning out the uterus, incising it and immediately removing its contents. It was interesting to observe how completely hemorrhage ceased when the uterus was emptied. The uterine cavity was then thoroughly irrigated with hot sterile salt solution and packed firmly with 10 per cent. iodoform gauze carried through the cervix into the vagina. The uterus and abdomen were closed in the usual manner. The vagina was sponged out with mercuric chlorid solution and firmly tamponed with sterile or mercuric chlorid gauze. During the operation the patient received intravenous saline transfusion, and strychnin, digitalin and atropin were given hypodermatically. In exsanguinated cases the patient was kept in the Trendelenburg posture until reaction occurred, and external heat, rectal injection of stimulants and oxygen inhalation were used with success.

Of the seventeen patients three were especially exsanguinated through severe and repeated hemorrhages. All the mothers recovered. The maternal mortality was nil; the fetal mortality 40 per cent. There was no maternal morbidity except slow recovery incident to severe anemia. Infection did not develop.

250 South Twenty-First Street.

HYSTEROTOMY *

JOHN B. DEAVER, M.D.
PHILADELPHIA

Since 1912, when my paper on hysterotomy was read before this Section, I have had twenty-five cases in addition to the fourteen then reported in which I have done this operation. Thus far there has been no mortality and no complication, either immediate or remote, as far as I am able to determine. This experience has strengthened my conviction that an active surgeon engaged in pelvic work not infrequently encounters cases in which this operation is a distinct addition to his diagnostic and therapeutic resources; that its dangers and disadvantages are theoretical rather than real, and therefore that condemnation of the operation by those who have had no experience with it is but another instance of that false conservatism and adherence to tradition which has blocked the early adoption of many salutary measures.

The general indications for hysterotomy may be stated as (1) to establish a prompt and certain diagnosis when a reasonable suspicion exists of malignant disease of the interior of the uterus; (2) for the prompt termination of pregnancy in cases in which life is acutely endangered by the continuance of that condition.

Of the twenty-five operations during the past two years, fifteen were performed for indications of the first class and ten for indications of the second class. In other words, 60 per cent. of the operations were undertaken with the well-defined idea that some early neoplastic process was present in the interior of the uterus, and 40 per cent. because of danger to life by reason of complications of pregnancy. The following is a brief summary of the findings. In two cases a single myoma was found in a pregnant uterus. I could not determine to my own satisfaction whether or not the enlargement of the uterus was due to pregnancy or to a submucous fibroid. A hysterotomy revealed pregnancy which was then terminated. It demonstrated however, that the uterus was normal except for a single myoma, which was enucleated and the woman thus was saved from the more mutilating and dangerous operation of hysterectomy, not to mention the preservation of her sexual functions. In two cases incision of the enlarged symmetrical uterus showed a single submucous myoma, which was enucleated and the uterus after repair left *in situ*.

In one case of symmetrically enlarged uterus, incision showed multiple intramural fibroids and a hyperplastic state of the endometrium. This was sufficient indication for removal of the uterus. The microscope showed a chronic interstitial metritis in addition to the gross changes.

In six cases of irregular bleeding leading to a suspicion of malignant disease the incision showed in three degenerated products of conception, and in three partial separation of the placenta.

I am willing to debit these cases against the operation, for I would not by design open the uterus intra-abdominally for these conditions. Unfortunately, however, I cannot always tell a pregnant uterus when I have it in my hands, much less diagnose the condition by signs and symptoms in the very early months. If there is any one in the world who has this phenomenal ability let him cast the first stone.

In two cases of premature separation of the placenta there was good reason to suspect placenta praevia, which I consider an absolute indication for hysterotomy.

One case of chorio-epithelioma in very early stage was revealed by this incision. A brief history may be of interest.

A woman 32 years of age was taken ill six months before admission with pain in the left iliac region radiating to chest and back. At intervals she has had return of this pain, which for the past two months has become much more severe. A leukorrheal discharge, frequently blood-stained, was constantly present. The hemoglobin was 70 per cent. The uterus reached 4 cm. above the pubis. At operation the uterus presented no external abnormality. By hysterotomy the products of conception were removed and a friable ulcerated area seen on the posterior wall. The uterus was removed. Microscopic examination showed chorio-epithelioma.

In one case a very early carcinoma was detected in the extreme left cornu. The patient was a woman aged 54, who had been bleeding irregularly for two years. During the past three months the flow had become much more profuse. There was no pain. Examination was negative. At operation the uterus was small and the appendages appeared normal. Hysterotomy was done. In the left cornu a friable ulcerated area was apparent. Malignancy was suspected and the uterus removed. The microscopic examination revealed an early adenocarcinoma at the suspected area.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

V. 191

In ten cases hysterotomy was done for the urgent necessity of terminating pregnancy. In one case of contracted pelvis with the fetus at term the classical cesarean section was employed, both mother and child being saved. Concerning this type of hysterotomy fortunately there is now no noteworthy difference of opinion. The simplicity and safety of the operation, however, are still not thoroughly appreciated, owing to the fact that there is a considerable statistical mortality. When it is realized that this mortality is almost wholly due to depletion of the patient's powers by unavailing attempts at delivery by other means, together with the subsequent infection that attacks a large percentage of women so mistreated, the operation will be more often performed as a primary procedure and the maternal mortality will approach the vanishing-point while many more children will be saved and disabling birth injuries avoided.

In one case of toxemia of pregnancy with eclampsia at six months delivery was effected by hysterotomy. The child was not viable, but the mother, who was only 20 years old, recovered promptly. This operation was done in February, 1913. The patient is now in the eighth month of a second pregnancy, the course of which is proceeding uneventfully without signs or symptoms of toxemia.

Hysterotomy is not advised for all cases of toxemia of pregnancy. There are few serious conditions the onset of which can be detected so readily as this. Undoubtedly palliative treatment should be instituted at the outset on the first indication of nephritis, increased blood-pressure, digestive or visual disturbances. If toxemia increases in spite of treatment it is, in my opinion, an absolute indication for the termination of pregnancy. If the condition has been detected early there is ample time for the induction of premature labor. In neglected cases, however, and particularly in the event of eclampsia, the quickest, safest and surest method of dealing with the condition is by hysterotomy. It matters not for this discussion what is the nature and cause of the toxemia, for it is clear enough that pregnancy is at bottom responsible for it. The sooner pregnancy is interrupted the more quickly does the cause cease to operate. Moreover, hysterotomy is a rapid and safe means of delivery, making but little demand on the vital powers of the patient, which can by no means be said of *accouchement forcé* or of the methods of induction of premature labor. Naturally, in the late cases there will be a mortality under any method of treatment, owing to irreparable damage to the essential organs, but that procedure which at once relieves the underlying condition and makes least demand on the vital powers of the patient should certainly be the method of choice.

In three cases of placenta praevia delivery was by hysterotomy. The duration of pregnancy was three, five and six months, respectively. In two cases the attachment of the placenta was marginal and in one central. In all I have performed hysterotomy in eight cases of placenta praevia without maternal mortality. The absolute command of hemorrhage which the surgeon has during the operation of hysterotomy is sharply contrasted with the danger from bleeding under the more common procedures of operative obstetrics. Shock is less and the liability to infection is certainly not greater. Under proper circumstances for laparotomy there can be little excuse for flirting with death by the uncertain methods so largely in vogue.

In five cases I emptied the uterus by hysterotomy because of a severe renal infection amounting to sepsis. Simple pyelitis is not an indication for hysterotomy. Palliative measures or local treatment will in most instances effect a cure. When, however, the general condition is alarming, this operation will give the most rapid and happy results. In one case, actuated by conservatism, I refused to empty the uterus, a decision which later I regretted, as the unfortunate woman in her debilitated condition contracted a severe puerperal infection from the effects of which she died. When a septic focus exists in the body with consequent infection of the blood-stream, there is grave danger of auto-infection of the uterus after childbirth. The circumstances of the patient must be considered among the indications for the termination of pregnancy under these conditions. When the patient is able to command good treatment and hygienic surroundings, every effort should be made to carry her through to term. A patient of the poorer classes, however, who has to look forward to some months of advancing pregnancy in a septic state that does not yield to such treatment as can be carried out and maintained, is entitled to have her life considered the paramount issue.

Let us now examine the net results in the twenty-five cases treated. There was no mortality. The morbidity was only that of an ordinary laparotomy. There was but one complication, a wound infection, not properly chargeable to the hysterotomy, as the uterus itself was uninfected. Only three uteri were sacrificed, one each for carcinoma, chorio-epithelioma and myoma of the uterus associated with chronic metritis and endometritis. One eclamptic patient was cured and is again normally pregnant. In one case of contracted pelvis treatment was successful for mother and child. Five patients with partial separation of the placenta were relieved and three patients with placenta praevia were snatched from imminent danger. In the remaining cases, while the operation was not life-saving, yet in its results it challenges any other form of treatment yet devised.

That the operation is not in itself dangerous is shown by the absence of mortality in this series and corroborated by the experience of Russell of Johns Hopkins, who, in 1905, reported thirty-two cases without death. Dickinson in an excellent article on diagnostic hysterotomy with a summary of twenty-seven cases expressed great satisfaction with the operation, but did not state definitely whether he had had any mortality. Howard Kelly, in a personal communication, states that he has performed hysterotomy in about sixty cases without mortality from the operation. From memory he speaks of a case similar to some of my own, which gave him particular satisfaction. This was an instance of single submucous myoma, not palpable but productive of excessive flow, pain and ill health. The patient had been condemned to a radical operation, but by hysterotomy and removal of the submucous myoma the size of a hickory-nut she was cured and has remained so for ten years. A considerable number of sporadic cases exist in the literature and were encountered in the preparation of this article. While no attempt at completeness was made, it was noteworthy that not a death was reported as following the operation. To Russell's opinion that

"suprapubic hysterotomy is of conspicuous service in cases of persistent uterine hemorrhage which is not controlled by any form of treatment and in which bimanual palpation of the pelvic organs has given an absolutely negative diagnosis" I can give hearty assent. I believe, however, that its use may be extended with benefit, as in the cases here cited, and that the term may be advantageously employed to cover the incision of the uterus in the interest of the mother in the early months of pregnancy, the child not being viable.

Hysterotomy is destined to be of great service in the early diagnosis of cancer of the fundus of the uterus. There are many who maintain that surgery has reached its limit in the treatment of cancer of the uterus and that we must mark time until an improvement is brought about in diagnosis. In my opinion, surgery has not reached its limit until it has assisted in every possible way in the early diagnosis. I hear a great noise of many voices saying that we are now in possession of such a method in the curet and microscopic section. If I did not know the difficulties of thorough curettage, of the gathering and preparation of all the scrapings and the subsequent chance of failure to section the malignant area, I might be tempted to agree; but the mortifying experiences which I have had and which I have known the most competent and thorough men to have in attempting to scrape out the contents of a uterus, lead me to distrust the curet, which I fully believe is the most abused and over-rated instrument in the gynecologists' armamentarium. Four weeks ago a woman, aged 24, consulted me in regard to vaginal bleeding. Six months previously she had miscarried at three months. Following this she bled and came under the care of one of the most competent gynecologists in Philadelphia. She was curetted at operation, but not enough was obtained, in the judgment of the operator, to account for the hemorrhage. The abdomen was accordingly opened. The uterus appeared normal and therefore the abdomen was closed. When she came to me she had hemorrhagic fungating masses on the anterior and posterior walls of the vagina, probably chorioepithelioma. Here the curet failed; and moreover, if it was justifiable to open the abdomen why not the uterus, the seat of the diseased condition? This simple and proved innocuous procedure might have made the difference between cure and a hopeless outlook three months later.

Vaginal incision of the anterior wall of the uterus has been advanced as a satisfactory substitute and a safer operation than suprapubic hysterotomy. Technically, it is somewhat more tedious and difficult, though that in itself would be no bar to its acceptance did it possess any real advantages. On the contrary, it fails of its object in exposing the entire fundus. The anterior wall of the uterus can be incised only as far as the peritoneal reflexion of the bladder. The field is small and difficult to keep clear of blood, and the cornua cannot be seen. In addition to this, there is a real danger of injury to the bladder and urethra, as has actually occurred. The carcinoma of the cornu here reported could not have been seen by this method. It should be understood that the hysterotomy incision is for the purpose of seeing and that palpation will not suffice for the diagnosis of early cancer of the uterus. The uterus itself is hard and its consistency is not noticeably increased by the implantation of cancer. We must depend on a ragged, friable, easily bleeding and possibly ulcerated surface, characteristics appreciable only to the eye.

Not only can we detect a percentage of early cancers by hysterotomy, but in a more considerable percentage of cases in which cancer is reasonably believed to exist will the incision reveal the true cause of the bleeding in hyperplastic endometritis, polyps of the endometrium or small submucous myomas. These conditions may necessitate only local treatment which can be made thorough and complete under the guidance of the eye. The impossibility of thorough removal of a hyperplastic polypoid endometrium by blind scraping can be appreciated only when such a uterus is freely opened and the actual condition seen. To those who are able to delude themselves into the belief that they can accomplish the impossible, the operation of hysterotomy will not appeal.

The operation itself is simple. The abdomen is opened by the usual paramedian incision. The uterus is grasped in volsellum forceps and carefully packed off by moist gauze pads. The anterior surface is then incised down to the peritoneal reflexion of the bladder, which may be carried forward if necessary. With small retractors the interior may be completely exposed to view. If the uterus is to be allowed to remain the incision is closed by buried layers of chromicized catgut sutures extending down to, but not through, the endometrium. Accurate apposition is essential. A running seromuscular stitch of linen placed close to the edge and invaginating the serosa completes the closure.

1634 Walnut Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. DAVIS AND DEAVER

DR. RICHARD C. NORRIS, Philadelphia: The important advances in recent obstetrics have been surgical, and yet, it is my conviction that surgery applied to obstetrics should come, not from the general surgeon, but from the trained surgical obstetrician. The problem is not, what surgery can do, but rather what it must do. I believe that cesarean section is an operation in the obstetrician's armamentarium that will be resorted to more and more frequently. The problem is not to find out how often we can do it, but how often we must do it. Hysterotomy for routine diagnosis is "going some." The curet has helped us, as also has intra-uterine exploration with the intelligent finger, and our laboratory methods combined with the clinical history. When these means of diagnosis fail us, which is very seldom, there are a few cases which bring the patient to the surgeon's knife. The abdomen is opened and what happens? Time and again you will take the uterus out after you have cut it open. Your diagnosis is pretty well made beforehand or you would not operate. There are a few cases in which we are perplexed; but, let it not go forth from this Section, that if you don't know what is wrong inside a woman's uterus, you should cut it open to find out. Such a doctrine is pernicious and all the more so when taught by a distinguished surgeon.

In the treatment of placenta praevia an analysis of statistics will show that the mortality lies with the infected patient. Preliminary care of the patient is necessary. We see cases of placenta praevia in which the patients are so exsanguinated and so surely infected that it would be an obstetrical folly, and a surgical crime, to do a cesarean section. There are cases recognized promptly, and early brought to the obstetrical surgeon, in which cesarean section is the ideal procedure—and the well-trained obstetrician recognizes that. You can reduce the mortality of placenta praevia by training the profession to treat cases early, in the proper way, far more than by advocating cesarean section for every case. It is a campaign of education of the

rank and file that is the real burden of the efficient obstetrician and surgeon. The time is at hand when modern surgery applied to obstetrics will add to her laurels and increase her triumphs.

DR. GEORGE M. BOYD, Philadelphia: Prophylaxis, I believe, is the keynote of the whole situation. On the one hand, we have numerous danger signs in the toxemia of pregnancy leading to eclampsia which if heeded will prevent this condition. This is not so markedly the case in placenta praevia. Here the patient is seemingly well and in 75 per cent. of cases she will go nearly to the end of gestation without a danger sign. She then begins to bleed and it is in the early recognition of the magnitude of this hemorrhage that safety lies. We must teach the student to look with great gravity on this hemorrhage in the last months of pregnancy. He must look on such a patient as one suffering from arterial hemorrhage and must make an accurate diagnosis. If to do this requires anesthetization and the patient refuses he had better turn the case over to some one else to treat. It is then, in the early recognition of placenta praevia that we can do effective work. The treatment of placenta praevia formed the subject of the opening discussion in the seventeenth meeting of the International Congress in London. As a result of that discussion I reached the conclusion that, in the majority of cases, the patient is best treated by bipolar version. The patients die of infection and also of hemorrhage. A few cases will probably be better treated by ciliohysterotomy. In 1901 I presented, as part of a symposium on placenta praevia in our county medical society, a paper on cesarean section in placenta praevia and it was pretty sharply criticised. Since that time I have followed two or three of the maternities in our city. I advocated it at that time in the restricted sense in the primipara with a central implantation of the placenta. I still feel that it has a field of usefulness although limited. In only two cases have I felt that cesarean section was indicated. In both cases the patients flatly refused operation. I believe both would have been better served by cesarean section. I would emphasize the necessity of early recognition of placenta praevia and its immediate and radical treatment. In the majority of cases in the hands of the general practitioner I believe we serve our patients best by performing bipolar version.

DR. DAMON B. PFEIFFER, Philadelphia: Any one who has had my opportunity of seeing numerous uteri removed by various able and conscientious surgeons, must have received the impression that gynecologic diagnosis lacks something in that precision which is necessary in fitting the operation to the case. We may be horrified at the prospect of incising uteri unnecessarily. Are we not horrified at the prospect of removing uteri unnecessarily? I believe that very many uteri are removed every year for conditions which would not warrant hysterectomy. This movement toward diagnostic incision is the result of a demand for better diagnosis on which to base our most radical procedures. Mistakes occur usually in connection with bleeding, a symptom which demands recognition of its cause in order to determine the treatment which is adapted to the particular underlying pathologic condition. We admit, of course, that many uteri must be removed for bleeding, the cause of which is at the present time inexplicable. It is a different matter when you remove a uterus with a small submucous myoma, a small isolated polyp or a hyperplastic endometritis. In all these cases diagnosis could have been made earlier, I think by hysterotomy than by curettage.

DR. JOHN O. OSBORN POLAK, Brooklyn: I do not think that we should decide against or in favor of hysterotomy without taking some of the considerations for and against. It is a pitiable condition if we cannot make a diagnosis without opening the abdomen for diagnosis. Hysterotomy has a definite place. Why any man should do hysterotomy on early placenta praevia or for diagnosis in the early months of pregnancy I cannot see. Day after day we do hysterotomy in questionable bleeding of the uterus by the vagina. We come to exactly the same conclusion that has been so admirably expressed here: Feel and see what is inside the uterus and the cornu, and I don't think there is any difficulty in doing it. In some 500 cases of vaginal operations that we have done I have injured the bladder just once, and I did it only last week, showing a man how easy it was to do it. Dr. Deaver's statement that abdominal hysterotomy should be used as a diagnostic method, is admirable in Dr. Deaver's hospital, in Dr. Deaver's hands, but it is a most dangerous statement to take out of this Section. Again in the early toxemias of pregnancy why should we do abdominal hysterotomy when we could empty the uterus by vaginal hysterotomy with no morbidity? There I am absolutely assured.

DR. JOHN M. FISHER, Philadelphia: It is not necessary to have the eye on everything within the uterus in order to make a proper diagnosis. Dr. Deaver has spoken of curetting as being almost the only method we have of determining the condition of the interior of the uterus, save that of hysterotomy. We all know that it is possible to dilate the uterus so that the finger can be introduced and that by the educated finger a diagnosis can be made of the presence of abnormal conditions within the uterine cavity. I recall a case in particular of a woman in the Philadelphia Hospital who had found her way into the surgical department of the institution, referred to us as having cancer of the body of the uterus requiring hysterectomy. Dilatation of the os and digital exploration of the uterus demonstrated retention of fetal bones. These had been there almost four years and had become imbedded in the substance of the body of the uterus. The history of an offensive discharge covering four years should have sufficiently demonstrated to the surgeons that the case was not one of cancer. For another case a piece of gauze was found introduced by a man who had curetted some months previously. In this, likewise, a diagnosis had been made of cancer of the uterus. After dilating the cavity of the uterus a proper diagnosis was readily made. I saw a case of persistent bleeding recently in which curetting had been done twice, and the woman was still bleeding. As the curetting had been done by general surgeons, not by a gynecologist, we thought that possibly something had been missed. The patient had had an abortion several months previously. By the introduction of the finger through the previously dilated cervix the cause of the bleeding was easily determined to be a small mass attached to one cornu of the uterus. The mass was removed and the bleeding ceased. So with other cases. Hysterotomy for the diagnosis of submucous fibroids is rarely necessary. Dilatation of the uterus can be effected with the finger, bougies, metranoiter or lamina tents (properly sterilized), so that a satisfactory digital exploration can be made. The man who does hysterotomy for diagnosing submucous fibroids in all cases is making a serious mistake because it is absolutely unnecessary. So in many cases of cancer of the body of the uterus, early diagnosis can be frequently made by the finger. The gynecologist develops a sense of touch for determining things that the general surgeon has to see.

DR. A. J. RONGY, New York: As long as we are going to relegate the placenta praevias to the general practitioner, so long will these cases be more injurious than a perforated gastric ulcer. No general practitioner undertakes to treat this condition. The secret of the successful treatment of placenta praevia lies in early diagnosis. In early placenta praevia, as Dr. Davis has said, or in ectopic pregnancy, we have taught the general practitioner that he must presuppose the possibility of eclampsia. So with a woman who is pregnant and begins to bleed in the seventh or eighth month, the practitioner must presuppose placenta praevia, no matter what other diagnosis he may have in mind. As soon as the condition of placenta praevia is diagnosticated the woman must be taken to a well-trained surgeon or to a hospital. She has no chance at home. We have practiced all sorts of medical obstetrics heretofore, the results of which are known. My personal results with cesarean section in placenta praevia are not as good as I would like them to be. I have operated in cases probably too late. The best chance for saving the life of the patient and of the child in placenta praevia is by abdominal cesarean section.

DR. JOSEPH B. DELEE, Chicago: I have performed cesarean section for placenta praevia eight times. At the same

time and during this period I have treated sixty-eight other cases of placenta praevia myself and the mortality of the cesarean cases has been nil. The mortality in the sixty-eight other cases has been three. Of these cases two patients died of hemorrhage, one of whom I believe would have lived had I done cesarean section. At the same time the obstetrician is the one and the only one capable of saying which case is proper for cesarean section. A large majority of placenta praevia cases can be successfully treated from below without "flirting with death." It is my conviction that the placenta praevia case is the case for the specialist obstetrician. A general practitioner, with a large amount of obstetric experience cannot accumulate sufficient technical skill to handle these grave complications. The curet has certainly been damned too much because it has not been used correctly. It has deserved a great deal of this condemnation. I use the curet for diagnosis, and by a systematic going over of the anterior, posterior and lateral surfaces find we do much with properly shaped instruments and the uterus steadied in its position by the outside hand. The fingers within the vagina guide the curet in the uterus and the operation will give a great deal of positive and definite though not final information. Emphasis was placed on the education of the doctors regarding the first hemorrhage in pregnancy. We should educate not alone the doctors, but the public, and we can educate the public to educate the doctors. The public should demand high obstetric skill and this demand can be brought through the women's clubs. In Chicago we organized a little club, "The Mother's Aid Society," which has rapidly grown to over 700 members. Its slogan is "High Standards of Obstetric Practice," and you would marvel at the formerly neglected obstetric conditions which are now referred to the doctors. This, done by a few women, well shows what can be done by the large federated clubs of women.

Dr. Swithin Chandler, Philadelphia: I am sure Dr. Deaver doesn't mean that every time a patient with pelvic disturbances comes to him he is going to do a hysterotomy, but that he is going to use his best judgment; that when he has a case indicating a serious pelvic condition, he is just as able as any one whether a gynecologist or not, to determine that by the ordinary means. To attack this operation of Dr. Deaver's we must consider two things: Either the operation itself must be dangerous or else the use of it in making a diagnosis is unwarranted. We certainly cannot attack the operation on the ground that it is dangerous. I do not agree with the men who state that the finger can always tell the condition present, nor can this be done always with the eye. If I have a case in which there has been a curettage and in which I cannot tell the condition by the finger, history of the case, etc., I shall do Dr. Deaver's operation. The man who does not, under such conditions is, in my opinion, just as guilty as the man who neglects a case until it is too late for operation. I would depend on Dr. Deaver to use his judgment in the individual case.

Dr. Edward P. Davis, Philadelphia: What is the status of the widest experience in the world to-day concerning placenta praevia? A recent investigation in one of the principal provinces of Germany, a country under the best medical conditions, shows that of all women dying in the perils of childbirth, 10 per cent. die from placenta praevia. What are the results of the treatment of placenta praevia in private houses by men trained in the universities of Continental Europe, and who have had hospital experience? Will 820 cases give you an idea? Probably a correct one or fairly so. They give a maternal mortality of 10.9 per cent.; a fetal mortality of from 40 to 60 per cent. Now let us take our cases of placenta praevia in hospitals; in the Congress in Berlin in the summer of 1912, was given the interesting report of Couvelaire in the Tarnier clinic at Paris, of 162 placenta praevias of serious nature without cesarean section, using the dilating bag and the rupture of the membranes, with a maternal mortality of 6.7 per cent., fetal, from 44 to 66 per cent. If we go to the Leipsic Clinic of Zweifel, than whom there is no more able obstetrician and gynecologist to-day, we find him getting, in placenta praevia, by combined version under strict asepsis, a maternal mortality of 3.3 per cent.; a fetal mortality of 68.8 per cent.; and by using the bag as described in my paper, we find him reducing the maternal mortality to 2.6 per cent. and bringing down the fetal mortality to 26.8 per cent. This must be taken as the acme of hospital treatment by skilled men without abdominal cesarean section. In the Freiburg clinic, a series of thirty-eight cases treated by abdominal cesarean section by Pankow gave a maternal mortality of 2.5 per cent.; a fetal mortality of 2.9 per cent. the lowest rate for mother and child yet reported. The question of abdominal cesarean section depends for its solution on whether the parturient woman in her complications is deserving of the care which a woman with appendicitis or ovarian cyst receives, or whether she shall have the older and less efficient methods. I hold it a gross injustice to the general practitioner of medicine that he be asked to undertake such responsibility under disadvantages, as he has been called on to do in the past, in obstetric practice. He has borne this responsibility alone and unaided, at any hour of the day or night, and he has done things from which the boldest surgeon would shrink; his results were extraordinary, and I yield to no one in his honor. The present trend of medicine gives to the general practitioner a field in which his opportunities are unsurpassed and for which the training of the medical schools to-day amply fits him namely, the field of diagnosis. The medical student to-day, so far as I have to do with him, is taught obstetric diagnosis first, and then what not to do, quite as much as what to do, and when to summon the competent obstetrician.

Dr. John B. Deaver, Philadelphia: I can answer the protest against opening the uterus if a diagnosis can't be made otherwise only by protesting against leaving the uterus unopened when a diagnosis cannot otherwise be made. Dr. Norris agrees that there are indications for this operation. As sane a man as Dr. Norris could not look at it from any other point of view. There is a type of disease of the uterus which no man can diagnose without resorting to the procedure I have recommended. What is the attitude of the surgeon to-day in upper abdominal disease? Is it possible to diagnose every upper abdominal condition before the abdomen has been opened? What does the exploratory operation reveal?—the true pathologic condition. Is it not a more honest, just, conscientious course to pursue than to deceive your patient by looking wise, getting a consultation fee and making them think that you know it all? Those who assume this position are dangerous doctors and capable of doing much harm in their community. We are no further along in the treatment of cancer than we were many years ago. We must operate in the precancerous stage, and those who are not doing as I and others advise in this respect will continue to write certificates of death, the result of latent cancer. Any one who uses laminaria tents to dilate the uterus invites infection. Any one who knows anything knows he cannot dilate the normal uterus with the finger for thorough exploration; this is an unanatomic, unphysiologic, illogical and unsound statement. The surgeon, I grant, who possesses the tactus eruditus is more fortunate than his brother who has never acquired it. Dr. DeLee sounded a note as to the laity educating the doctors. From what I have heard this afternoon I think it is high time that the laity educated the gynecologists.

Antityphoid Vaccination.—No amount of theoretical proof or disproof of the value of typhoid vaccine can affect the practical accomplishment of antityphoid vaccination. Previous to vaccination in the United States Army the best sanitary measures were only able to reduce the death-rate to 19 per 100,000. In southwest Germany perfect sanitary organization and military discipline have only been able to reduce the typhoid death-rate to 4 per 100,000, while the case-rate for the United States Army in 1913 was only 3 per 100,000. Vaccination is as successful in preventing typhoid as in preventing small-pox. The death-rate from typhoid in the registration area for 1913 was 16.5 per 100,000. There are no valid reasons why everybody outside the Army and Navy also should not be vaccinated. Vaccination against typhoid does not prevent other water- or milk-borne diseases, so that sanitary improvements are as necessary after as before vaccination.—Will Shimer, *Jour. Ind. State Med. Assn.*

THE NECESSITY FOR THE ESTABLISHMENT OF A NATIONAL LEPROSARIUM *

W. C. RUCKER, M.S., M.D.
Assistant Surgeon-General, United States Public Health Service
WASHINGTON, D. C.

The problem of the control of leprosy in the United States presents many contradictions and perplexities. Here is a disease, one of the oldest of which we have knowledge, and about which we know relatively little. We witness its effects and believe we have discovered its causal organism, yet we have garnered only a very small sheaf of facts regarding its epidemiology. The route of entry of the bacillus is not definitely known; the organism is cultivated with the greatest difficulty and exists in many strains which present marked differences; it is not pathogenic for the lower animals and we do not know the length of its incubation period in the body of man. The rôle of rodents and insects in its transmission has been suspected, but here again we must admit our ignorance. There exists no positive means for its diagnosis in its earliest stages; no wholly satisfactory method of treatment has been devised; the period of its greatest infectivity is unknown, yet we believe that the disease is mildly contagious. We do know that there is no racial immunity to leprosy, that it exists in all portions of the globe and that segregation and personal cleanliness are our only weapons against it. Add to the foregoing the facts that the individual and community fear of the disease is so great as to amount to a veritable leprophobia, that there are several well-established foci in the United States, that the disease is slowly but surely on the increase, that there are probably many more cases unreported than there are reported, that there exists no federal institution for the exclusive care and reception of lepers on the continental United States, and the statement of the problem is complete.

Out of such a mass of contradictory evidence, there are only two facts on which we may lay hold for the purpose of controlling the disease. These are segregation and cleanliness. We know that the disease exists among those who are careless in their personal hygiene and that when these persons are removed from intimate contact with society, the disease dies out. The disease has been made notifiable in most of the states, in three of which leprosaria have been established. Each of these treats a small number of lepers, but the per capita cost of such treatment is excessive because the overhead charges are divided by such a small number. This, in part, has contributed to the very general desire for the establishment of a federal institution in which all the lepers in the continental United States may be segregated.

Another factor in bringing about the feeling among thinking men that we should have a national leprosarium is the inhuman treatment to which lepers are subjected in this country. Let a man be marked as a leper and he becomes a pariah, an outcast from society, to be hounded from place to place, to be locked up in a lonely, often filthy, building, there to be viewed at a distance by the more intrepid as some wild and dangerous animal. The unwelcome visitor disturbs trade, and he is hurried by night over the state line, there to be subjected to further indignities and to become a thorn in the side of another community, by reason of the economic losses which his presence produces. Verily the lot of the leper in this Christian country of ours is sad and troubled.

From time to time, intelligent legislators have introduced bills into Congress looking to the establishment of an institution in which the unfortunate leper may be protected from society and society protected against him. No one doubted the wisdom of such a measure, but the leprophobia of the general public is such that none of these bills have ever been allowed to come to a vote, because every community feared that it might be selected as the site for the leprosarium. It was useless to say that the disease is only mildly contagious because that at once destroyed the raison d'etre for a place of segregation, and the public as a whole has not yet learned the simple lesson that cleanliness in all things is our greatest bulwark against disease.

None of the proposed measures have considered the mechanism of an official diagnosis, nor have they taken into account the fact that if society is to be permanently protected, the leper must be legally committed to the place of segregation. Once so committed, he must be deterred from reentry into close, prolonged or intimate contact with society, and the weak-mindedly sentimental must be prevented from aiding in such reentry.

Our immigration laws require the deportation of lepers who are found to have the disease within three years after landing, provided it be shown that the disease existed prior to their arrival in America. This law takes no account of the long period of incubation of the disease and the great difficulty of its recognition in its early stages. The frank case of leprosy is remanded at quarantine, but the immigrant in the incubative stage of the disease is not deportable after three years have elapsed, or if he can by legal quibble defeat the attempt to prove the existence of the disease prior to debarkation.

Many of the countries of the world have leprosaria. Many of the countries which support such leprosaria are far less wealthy than the United States. We know that the number of cases in the United States is relatively small, and that if the disease is fearlessly attacked now its control will be relatively easy. It is true that leprosy is a disease which spreads very slowly, but where it has once spread it never recedes unless active measures are taken.

In order to meet the foregoing conditions, I have made a rough draft of what seems to me to be appropriate legislation on the subject. This represents only my personal opinions, and has no official sanction whatever. The following is the text of the proposed act:

AN ACT for the prevention of the interstate spread of leprosy. Be it enacted by the Senate and House of Representatives of the United States in Congress assembled, That the Surgeon-General of the United States Public Health Service shall, on the request of any state or territorial board of health, appoint a board for the purpose of examining and making a diagnosis in the case of persons suspected of having leprosy, said board to consist of not less than three commissioned medical officers of the United States Public Health Service who shall be skilled in the clinical and bacteriological diagnosis of leprosy, and the findings of said board shall be final.

2. That when any state or territorial board of health shall desire a diagnosis in the case of any person suspected of suffering from leprosy, it shall request the Surgeon-General of the United States Public Health Service to appoint and convene a board as aforesaid, and said state or territorial board

* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

of health shall present the person to be examined to the said board.

3. That there is hereby appropriated out of any funds remaining unappropriated in the treasury of the United States the sum of five hundred thousand dollars for the purpose of erecting and maintaining a National Hospital for Lepers, and the secretary of the treasury is hereby directed to acquire a suitable site for the erection and maintenance of a National Hospital for Lepers, said site to be so located as to prevent the inmates in said hospital from conveying the contagion of leprosy to neighboring communities, and the secretary of the treasury is authorized to utilize for this purpose any of the unallotted lands of the United States which in his opinion are suitable for a site for the erection of said hospital, provided, that if in the opinion of the secretary of the treasury none of the unallotted lands of the United States are suitable for said purpose, he may acquire by purchase or otherwise said suitable site, and the secretary of the treasury is hereby directed to cause to be erected and maintained on said site suitable buildings and equipment for the care of persons suffering from the contagion of leprosy, and for the study and investigation of the disease.

4. That when any person in the United States shall have been examined by a board as aforesaid and found to be suffering from leprosy, the said leper shall be taken before a United States District Court and the judge thereof shall commit said person to the National Hospital for Lepers, and when said leper shall have been so committed he shall not leave the said National Hospital for Lepers without the express permission in writing of the Surgeon-General of the United States Public Health Service, and there may be received into said hospital commissioned officers and enlisted men of the United States Army, Navy and Revenue Cutter Service, who shall have been examined by a board appointed as aforesaid and committed by proper military court, and there may also be received into said hospital any of the beneficiaries of the United States Public Health Service who shall have been examined by a board and committed by the United States District Court, as aforesaid, provided, that any alien immigrant who shall develop leprosy within seven years after his landing in the United States shall be remanded to the country whence he came, and provided further, that when any person or persons shall give bond in amount not less than five thousand dollars to a United States District Court for the safe keeping of a leper according to rules and regulations made by the Surgeon-General of the United States Public Health Service and in such manner as in no wise to endanger the public health, said leper shall not be committed to the National Hospital for Lepers, and provided further, that when on the evidence of a board appointed as aforesaid it shall be made to appear to the satisfaction of a United States District Court that said person has been cured of leprosy, said person shall be discharged from the National Hospital for Lepers.

5. That it shall be a misdemeanor for any person committed to the National Hospital for Lepers to leave said institution except in the manner aforesaid and any person or corporation aiding, assisting or abetting in the escape of any leper from said institution shall be guilty of a misdemeanor, and any common carrier transporting said escaping leper shall be guilty of a misdemeanor.

6. That said National Hospital for Lepers shall be under the control and direction of the Surgeon-General of the United States Public Health Service, who shall make rules an regulations for its administration, and when any officer or employee of the United States Public Health Service shall be detailed for duty in said hospital, he shall receive in addition to the pay and allowance of his grade one-half the pay of said grade and such allowances as shall be provided by the Surgeon-General of the United States Public Health Service with the approval of the secretary of the treasury.

7. That any person, partnership or corporation violating any of the provisions of this act shall be guilty of a misdemeanor and shall on conviction thereof be punished by a fine of not more than five hundred dollars or imprisonment for not more than two years, or both, in the discretion of the court.

THE DUTY OF THE GOVERNMENT IN LEPROSY CARE AND CONTROL*

ISADORE DYER, Ph.B., M.D.
Professor of Diseases of the Skin, Tulane University of Louisiana
NEW ORLEANS

The modern interest in leprosy was excited in the decade between 1880 and 1890, governed largely by the announcement of the discovery of the leprosy bacillus by Hansen in 1879 and by the death of Father Damien in the later eighties.

Impetus was given the study of leprosy by the immense work undertaken and completed by the British government in India and embodied in the report of a special commission, promulgated in 1890.

Many other governments grew active and the Berlin conference of 1897 was the direct outcome. Representatives of all important leprosy centers were there, as well as delegates from countries casually interested. The findings of that conference were important. Not only was leprosy declared contagious, but it was also considered so important in the economic relations of governments as to occasion especial recommendation of isolation "in all countries where social and legal conditions permit."

As special action covering this phase of the control of leprosy, resolutions were adopted, without a dissenting vote, covering isolation, to wit:

1. All cases of leprosy should be reported, and this should be made compulsory.
2. Each leper should be isolated.
3. Every government must recognize the necessity and the method of effecting isolation under its own social conditions.
4. That it be recommended to every government that isolation is necessary to prevent the spread of leprosy, and that the health authorities be authorized to act under the regulation of civil and national assemblies.

The response to the deliberations of the Berlin meeting was wide-spread, and a renewed effort was made by most civilized countries to investigate leprosy and to provide for its control. Among the few countries which ignored the findings was the United States.

EVIDENCE OF LEPROSY IN THE UNITED STATES; INDIGENOUS AND IMPORTED CASES

Twice in the last fifteen years the U. S. Public Health Service has been authorized to make a leprosy survey in this country.

The first report of 1902 submitted 278 cases as the result of the commission's work. Of these cases, 155 were from Louisiana alone. The balance of the cases came irregularly from other states, where no general system prevailed for the care of leprosy or of its notice.

The second report, in 1912, I believe, showed practically the same results.

The mere compilation of state records and of current periodicals showed that neither of these official reports was of any statistical value.

Since 1894, the Louisiana Leper Home alone has cared for nearly as many lepers as the Public Health Service statistics showed for the whole United States. That leper home has had a gradually increasing population, now numbering nearly 100 inmates. Texas has a number of cases, known to be as many as twenty-five or thirty, and estimated at twice that number; Florida

* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

has a number of cases also. There are cases in Mississippi and Alabama, and in all these states the great majority have originated in the state in which the disease has been recognized. California has had around thirty cases under control for many years. New York City has many cases—more reported in the journals than in all other sections put together; in New York the number is usually estimated at more than 100. Massachusetts has enough cases to have demanded an isolation hospital for them. Other states have noted cases, as Oregon, Minnesota, Michigan, Pennsylvania, Iowa, Wisconsin, Missouri, Ohio, Indiana, etc.

The disease is wide-spread and without much hindrance or control. The easy entrance of these cases from foreign countries is evident in the clinics in New York City as reported at the various dermatologic societies. In the winter of 1911-1912, at a meeting of the Academy of Medicine, seventeen cases were shown; among them not more than two or three were native-born, the rest coming from Central America, the West Indies or Continental Europe. At a clinic on the day of that meeting, several cases of extreme types were shown, all the patients being foreign-born.

THE FAILURE OF STATE ADMINISTRATION

The indifference of many states is in strong contrast with the hysteric activity of others. In New York the leper goes about freely, visiting the clinics, and often remaining as an inmate in a general hospital. Some lepers are confined on Blackwell's Island, but too few to be significant of any public health effort. The states of West Virginia and Maryland a few years ago struggled with one another to see which could be more medieval in the handling of a Syrian leper. The case of the soldier Early is still an acute problem in the care of leprosy. It will be remembered that his final allotment to government care disposed of popular clamor. Texas has passed laws which could not be enforced because of popular prejudices.

In Louisiana the law is adequate, compelling the report and confinement of lepers, but they abscond from the home, or run away to another state as soon as they know what is the matter with them.

The knowledge of the existence of the Louisiana Leper Home has made it the asylum for lepers from other states and even other countries, in spite of the fact that the law is specific in restricting provisions to Louisiana residents. There are many ways of subterfuge. The growing tax on Louisiana will be an obvious object-lesson to other states as soon as the provision for leprosy control is demanded by the incidence of the disease. Meanwhile no state has as yet solved the problem of leprosy control, and the disease grows annually in its spread and in its numbers.

THE PATERNAL FUNCTION OF THE GOVERNMENT

The federal government until now has been apathetic to this question. It might be properly urged that leprosy, like tuberculosis, syphilis, pellagra or smallpox, is a question of state administration under local health authorities. But the government has taken direct interest in some of these things, even at home. The stronger opposing argument, however, is the attitude of the government abroad.

Leprosy is a matter of such direct concern to the United States in the Sandwich Islands, Porto Rico, the Philippines and even on the Island of Guam, that in each of these territorial divisions there are large provisions for leprosy. The Philippines are provided with several asylums; the Sandwich Islands conduct a model leper colony for less than 500 inmates and appropriations are constant for the care of this asylum. More than this, only a few years ago as much as $250,000 was appropriated for the study of leprosy at Molokai.

Why has no provision been made at home, other than makeshift investigations which have no real value in the control of the disease?

OPPORTUNITY IN RESEARCH, TREATMENT AND CARE

It is true that good work in the study of leprosy has been accomplished by Brinkerhoff at Molokai, and Heiser and Clegg at Manila, but with the very limited opportunities afforded in this country, more has been done in treatment and care than in the colonies. The influence of climate has been observed in Minnesota; the treatment now most used in this country and in the Philippines originated at the Louisiana home and in my practice. The study of leprosy transmission to monkeys, fish and cold-blooded animals was elaborated by the laboratories of Tulane. The cultivation of the accepted bacillus of leprosy was furthered in this country, and at least one of the modern vaccines was originated in this country.

How much more could be done with governmental control and governmental opportunity, coordinating the many men available in the United States for such work!

This is a problem of national interest and importance and it only needs concentrated effort to solve it, which means permitting proper methods.

THE DANGER IN NEGLECT; EPIDEMIOLOGY IN THE UNITED STATES

As yet no great effort has been made to control leprosy in the United States. The foci of the disease are already recognized at all the four points of the compass—Minnesota, New York, California, Louisiana and Texas. The sporadic cases in the states in the middle territory show the signals of new areas of infection. Each seaport at present is a ready medium of new cases as quarantine of leprosy is administered, and once admitted the regulations of local and state boards of health are not adequate in provisions or enforcement to check the ingress by a proper notification to federal officials charged with the quarantine enforcement. Those of us who have been persistently militant in the demand for national control of leprosy are repeatedly subjected to the charge of hysteria in our ideas of the dangers of leprosy. Such attacks are engaged in by men to whom leprosy is an exotic disease, rarely observed and to whom no economic, sociologic or domestic phase can appeal. The disruption of a family through the occurrence of leprosy in its bread-winner; the horror of public condemnation of the unfortunate attacked by the disease; the notice of fresh outbreak in the same family, all are forceful arguments to one who knows the habits of the disease and the possibilities of the outcome. While leprosy is slowly contagious and probably mildly contagious, its usual horrors argue the danger of neglect. With probably 500 known cases to-day, how many will there be in ten years, if there is no control?

PREVIOUS ATTEMPTS AT NATIONAL LEGISLATION AND ACTION FOR LEPROSY CONTROL

In 1900, a bill for a national leper law was introduced at the Fifty-Sixth Congress by Mr. Raynor of Maryland. Its provisions generally contemplated a

response to the Berlin Lepra Conference. A commissioner on leprosy was projected, to cooperate with state boards of health. A reservation in Yellowstone Park or other suitable place was suggested, with an appropriation of $50,000 for the erection of suitable buildings. The bill carried provisions for the apprehension, observation and control of the individual leper, in and out of the national asylum, which should be open to all lepers in the United States. Provision for regulation of entrance or transportation of lepers from foreign countries, territories, etc., was also made. It was intended that the asylum should be in charge of the United States Public Health Service. This bill died in committee.

In April, 1913, at the first session of the Sixty-Third Congress, Mr. Lafferty introduced House Bill 1751, providing for a national leprosarium. The text follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and he is hereby, authorized and directed to establish a national leprosarium in the United States or any of its insular possessions, the location thereof to be decided upon after proper investigation by the Surgeon-General of the United States Public Health Service, subject to the approval of the Secretary of the Treasury. The Secretary of the Treasury shall have power to acquire, by condemnation or otherwise, a suitable site for the leprosarium and shall erect thereon all necessary buildings and thoroughly equip the same for the proper care and treatment of lepers confined therein and for the investigation and study of the disease of leprosy.

Sec. 2. That the Surgeon-General of the United States Public Health Service shall appoint all medical officers, assistants, surgeons, pharmacists and other necessary employees, and shall promulgate and adopt, subject to the approval of the Secretary of the Treasury, all necessary rules and regulations to carry this act into effect.

Sec. 3. That, under authority of this act, any state or territory of the United States is authorized to transport all persons afflicted with leprosy found therein to the leprosarium, and the Surgeon-General is directed to receive the same, such transportation charges to be paid by the United States.

Sec. 4. That there is hereby appropriated, out of any money in the treasury not otherwise appropriated, the sum of ——— for carrying this act into effect.

This bill has been before Congress over a year. A recent reading of the bill was noted in the press, but unless more interest is excited it will likely go the way of the first attempt.

RECOMMENDATIONS

The Lafferty bill should become law and the provisions for leprosy isolation should be adequately undertaken at once.

The institution of a leper colony should carry with it all of the necessary details for the proper care of the patients as well as for the study of the disease.

The cases should be grouped according to their type and stage. Terminal cases should be separated from recently developed cases. An infirmary should care for those with complicating diseases. Single rooms are better than wards, and these should be arranged with ample ventilation—as nearly open air as possible. Frame buildings are more desirable than other structures as they may be easily destroyed or renewed should this be desired. The walls, ceilings and floors should be of such material as to permit frequent fumigation. Men and women and children should be separated in any colony provision aiming at final cure.

All hospital plans should look out for the provision for bathing facilities, hot water especially.

No matter what experimental treatment may finally attain, accepted methods should be systematically followed.

The first and most important thing is to have a national asylum established. Then its opportunities should be broadly offered to all students of the disease.

The hospital facilities should be of such a character as to attract the leper who wishes treatment and care. The general public should know early that the national leper home is not for compulsory detention but for the care and possible cure of the disease.

124 Baronne Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. RUCKER AND DYER

Dr. Martin F. Engman, St. Louis: The need of a home for lepers and the national control of leprosy is well illustrated by a single dramatic incident that happened in St. Louis last summer. A former soldier in the Philippines came to the Washington University clinic with the macular type of leprosy. The period of incubation was about nine years. As the Missouri law required, the case was reported, and the patient at once was taken to a hut occupied by a chinaman with leprosy of a mutilating type. He later escaped from the quarantine, but, due to the publicity given his case, he returned to the quarantine hut in St. Louis and subsequently was given a better house to live in. A month later we had a second case of macular leprosy in St. Louis. This man had also been in the Philippines, and the period of incubation was about ten years. Owing to climatic conditions and the long period of incubation of the disease, the increase in cases in this country will be slow. We do not know anything about the method of infection. We probably know the organism that causes it; that is all. We know nothing of its cycle outside of the human body or its habitat. It is wise, therefore, to take every possible precaution against it, because when once established in a country it is difficult to eradicate. The only method by which this can be accomplished is by segregation. The time is now ripe to establish some law under which lepers can be segregated. It cannot be left to the individual states, as this would cause endless differences of opinion as to the diagnosis, etc. Government control is necessary. Every effort should also be made to check the hysterical wave that passes over this country every time a leper is discovered. This is one of the reasons why Congress has been so slow in taking any definite action in the matter. Whenever the question of the establishment of a leprosarium has been raised, and any particular locality has been mentioned, it has raised a storm of protests from the people in that particular section of the country. The opening campaign should be one of education. Through the daily press and by other means the people should be informed with regard to this subject. The Public Health Service of the U. S. Government is much handicapped by the lack of cooperation of the government, and the inability of the latter to do anything in the matter at present. One of the bills presented, that by Mr. Lafferty, is now before the Interstate and Foreign Commission, where it has been for some time. Mr. Dana, the chairman of the Mission to Lepers, who has worked hard in connection with this matter, has tried during the past winter to have this bill taken up by the Committee on Interstate and Foreign Commerce, but his efforts have thus far been unsuccessful, as the committee is overburdened with work. He thinks that if the medical men throughout the country will use their influence with the members of the committee, especially with the chairman, Mr. Adamson, it may be brought up.

There is at present quite a stir in Washington about leprosy on account of the Early case, and it is an opportune time for persons who are interested in this subject to com-

municate with their congressman by letter or otherwise, or even through their county medical societies. In Missouri we are trying to bring some influence to bear on Mr. Decker, who is a member of this committee. In that way we may be able to promote this cause, and if an urgent demand is made at once by the American Medical Association, coming through this body, it is possible that the question could be settled in a comparatively short time.

DR. WILLIAM S. GOTTHEIL, New York: Every aspect of this subject should be carefully considered, lest we go to extremes and do an injury to our leper patients instead of helping them. While leprosy is contagious, the danger of contagion is extremely slight, and it is not in the same class with tuberculosis and syphilis. For thirty years we have had from one to six lepers in our skin wards at the City Hospital in New York, and in all that time we have not seen a single case of infection. We have lepers in New York City who are well to do, and I know of two cases in which the families are abundantly able to take care of their afflicted relatives and it would be a crime to remove these patients to a leprosarium. I know that Dr. Rucker, in his proposed legislation on the subject, makes removal to a leprosarium optional by bonding such patients. There are cases of leprosy without any buccal or nasal secretion, and I do not regard such cases as a menace to society. They may remain in such a condition for many years. We have had one leper at the City Hospital in whom for many years the only symptom was the presence of a few macular lesions. That patient is now developing a few tubercles.

DR. ERNEST L. MCEWEN, Chicago: The care of the leper should fall on the nation rather than on the states. The disease could be eradicated if we could isolate all the lepers. A most important step, as Dr. Engman has pointed out, will be to educate the laity with regard to leprosy, and this must be accomplished largely through the press. We must get at the people who control the press dispatches. The efficacy of this press control was well shown in a case of leprosy which we recently had in Chicago, when the patient was allowed to remain in the county hospital for some time without sensational comment by the newspapers. Later, this leper was sent east for deportation. A private car was assigned to him, together with a male nurse and a representative of the health department who had him in charge. When the food which they took with them became exhausted, they were obliged to apply to the men on the dining-car ahead for a further supply. This was finally obtained, but the food was passed to them on broken dishes and with the understanding that these dishes were to be destroyed! This is a good illustration of the insane dread with which leprosy is regarded by the laity. In order to educate the people properly I believe we must get in touch with the daily press and seek to change its attitude with regard to the news items on this subject, so that these will be discussed plainly but truthfully, rather than from the point of view of the prevailing standard of news value, namely, ability to create a sensation.

DR. M. L. RAVITCH, Louisville: While it is easy to talk about educating the public or the press, it is quite another matter to accomplish it. Whenever you mention the word "leprosy" everybody gets panicky. The dramatic picture of lepers, described by Engman, can be seen in a good many places. In my own city we had a case of leprosy of the tubercular form in an American woman belonging to a very aristocratic family; through wealth and influence a report of the case was kept out of the newspapers. In spite of that, her own family refused to shelter her. You cannot educate the public on this subject. The best way would be to establish a national leprosarium, or, better still, institutions for lepers in different sections of the country where these patients could be received and treated, where they could work, and feel that they were not totally ostracized. A number of small institutions would be preferable to one large one.

DR. CHARLES H. WHITE, Boston: Massachusetts is fortunate in having its own hospital for lepers, but the advantages of such an institution cannot be compared with those of a national leprosarium. Besides, the expense to the state of maintaining such an institution is excessive. In the leper hospital in Massachusetts we have nineteen patients, and while I do not remember the cost per capita, it is very high, and it has been difficult to get an appropriation large enough to maintain it properly. We are at present trying to get an appropriation to build a central treatment station which will cost about $40,000, but the outlook is not very promising. Then, again, the relatively few persons of the various races represented in such a small institution means lonesomeness for the patient and added expenses owing to radical peculiarities as to diet, etc. Such an institution offers many opportunities for valuable original work in connection with this disease, but owing to its isolation, the means are not always at hand under state control. We shall never be able to do what we should for these patients until the national government takes hold of the work. At present, the institution is under the contol of the State Board of Charities, and I think they would be glad to consider a proposition to turn it over to the national government.

DR. JAY F. SCHAMBERG, Philadelphia: The national control of leprosy is imperative on two grounds: first as a proper protection for the public health, and, secondly, for the humane care of the leper himself. The absurd lack of uniformity in the different state laws concerning leprosy is frequently brought to our attention. About a year ago a resident of a neighboring country temporarily residing in New York was told that he was suffering from leprosy and came to Philadelphia for advice and treatment, but he always went back to New York to sleep, because in New York he was a free man while in Pennsylvania he was the subject of a quarantinable disease. This lack of uniformity in the laws of different states regarding leprosy also leads to the inhuman treatment of lepers, who are often driven from pillar to post, because the several states do not wish to burden themselves with the perpetual care of these unfortunate subjects. I agree with Dr. McEwen that it is the duty of physicians in general and of dermatologists in particular to educate the public with regard to the relatively feeble degree of contagiousness of leprosy and the unreasoning fear of the community at large. Most of us believe that these patients should be quarantined, with, possibly, certain exceptions. It would be difficult to discriminate between the wealthy and the poor leper, but I agree with Dr. Gottheil that we should not recommend that every leper in the community should be forcibly quarantined. I feel very strongly, however, that the care of the leper under federal jurisdiction is much to be desired.

DR. M. B. HARTZELL, Philadelphia: I think it wise that we should be a little more in accord before we commit ourselves to any definite action. We should decide first as to the kind of institution in which the lepers should be segregated. Should they be regarded as prisoners or given a certain amount of freedom, as is done in leprosariums in foreign countries? In view of the fact that the disease is very feebly contagious, it is exceedingly questionable whether we should take such a patient by the neck, figuratively speaking, and thrust him into a prison to remain for the rest of his life. We must discriminate in the treatment of these patients, and ask the government to take care of them in a scientific and humane manner. Indeed, I am not at all convinced that every leper should be closely segregated. Considering how little we know of the method of transmission of the disease, I do not think we are as yet in a position to say that these patients should be imprisoned.

DR. S. E. SWEITZER, Minneapolis: I am in favor of segregating lepers both for the purpose of studying the disease and for its proper treatment. In Minnesota we have a considerable number of lepers; as many as forty, I believe, have been under Dr. Bracken's supervision, but they are gradually dying out, and I do not think we have ever had a case of leprosy in the native born. This effect of climatic influence, I think, should be borne in mind in choosing the site for a leprosarium. I believe we will never succeed in stamping out this disease until proper precautions are taken to exclude lepers from this country. A number of years ago I saw a woman on shipboard, traveling first-class, in whom I made a diagnosis of leprosy,

and she was reported as a suspicious case. The quarantine officer said he had never seen anything like it and permitted the woman to go to her home.

DR. GARDNER T. SWARTS, Providence: In order to secure a leprosarium it has been suggested that we must first educate the public. That is to say, we must uneducate people concerning a belief which goes back over 2,000 years, but in order to do that we must first agree among ourselves as to the contagiousness of leprosy. In other words, we must first educate ourselves and then the public. In view of the generosity shown by New York, why should not New York be regarded as a leprosarium for the time being? A 15 year old leper was discovered by the Massachusetts authorities and escaped to Rhode Island, where he was immediately isolated. His family was ostracized and the health officer fumigated the school that the boy had formerly attended, even going so far as to burn the boy's desk and books and finally to tear down and burn an American flag with which the child was supposed to have come in contact. This is a good illustration of the views held by the public with regard to leprosy. I think one of the best ways to interest your Congressman in this subject is to call his attention to the expense that is entailed on the individual states by the care of lepers, and what a saving it would mean to his state if a national leprosarium were established. Such a suggestion might take hold. Is there not a law under which the federal public health service can take charge of and segregate a leper who is a fugitive from one state to another?

DR. W. C. RUCKER, Washington: The U. S. Public Health Service is deeply interested in this subject from the standpoint of the public health, the prevention of the further spread of the disease and its eradication. The humanitarian aspect of the problem has not escaped our notice; we also have an administrative interest in this matter, and we can handle it through the interstate quarantine regulations. One of the functions of the federal government is the control of interstate traffic; hence it is the duty of the government to see that the states be not harmed in that traffic. Regulations have been established known as the interstate quarantine regulations, which provide that when a leper goes from one state into another he may be apprehended by the government and placed in a convenient quarantine station, but every time we have done that we have been deluged with letters and protests.

As to the mildness of the contagion of leprosy, I do not believe that anybody can assert whether leprosy is mildly contagious or violently contagious. We are not even convinced as to the cause of leprosy, let alone the manner in which it is transmitted from one person to another. I believe the education of the general public with regard to this disease should begin with the medical profession, and I do not think that anyone can educate the latter better than the members of this Section. I believe the more publicity leprosy gets, the better. The more we agitate this subject in the daily press, the sooner we will get the leprosarium. With regard to the transportation of lepers, I believe they can be transported with perfect safety provided it is done intelligently. Until we know more about this disease and its mode of transmission, we will naturally take a lot of unnecessary precautions. In answer to Dr. Ravitch I would suggest that we can get one leprosarium first and then perhaps we can get more afterwards.

According to the provisions of the act for the prevention of the interstate spread of leprosy, suggested in my paper, there is no danger of these leprosariums becoming prisons or of segregating these patients against their will or without due process of law. The idea of Surgeon-General Blue is to have these leprosariums regarded as asylums of refuge or homes, with theaters, etc., where the patients could be amused, where they could work and perhaps even earn money to help support those who were dependent on them.

DR. ISADORE DYER, New Orleans: I appreciate the fact learned from Dr. Rucker, that the U. S. Public Health Service is now actively interested in the leper question. I have been working with that end in view for the past fifteen years.

THE THERAPEUSIS OF PERICARDITIS *

RAY LYMAN WILBUR, M.D.
SAN FRANCISCO

The pericardial sac in spite of its relationship to many important structures is, compared to the endocardium, accessible both for purposes of investigation and for local treatment. Since it often responds to the same infections, a careful study of pericarditis should be of value in considering endocarditis. In many ways the pericardium can, in its pathologic reactions, be likened to a joint. It may be infected by the same organisms as a joint either by extension of a local process or as part of a general infection. There is present the same spontaneous pain, the pain after excessive movement or strain, and often the pain after exposure to cold. Effusions of various kinds form and adhesions may appear and extend up to the point of obliterating the cavity. The treatment usually given is not unlike that employed for a joint, the main differences being that the danger to life is greater in pericarditis either from excessive effusion, or hampering adhesions, and there is the impossibility of keeping the part absolutely at rest which is the principal aim of most forms of treatment for acute inflammations of joints. Since, as Rosenow has pointed out, bacteriologic studies of the disease processes of the living body up to date have largely been confined to its excretions and fluids, it is not unlikely that the study of the tissues, bone-marrow, cartilage, etc., about joints and of the pericardial sac itself and of the upper layers of the heart-muscle will clarify our conceptions of the inflammations in these localities. Unfortunately it is likewise probably true that local injections of medicaments into the pericardium for purposes of treatment will be as disappointing as they have been in most joint conditions, and for similar reasons, that is, the infecting agents being in the deeper tissues. The conditions in the pericardium except for the nervous tissues are apparently simpler than those of the synovia of joints. As in joints, it seems justifiable to make careful studies to learn the limitations and possibilities of medical treatment and of surgery both as to the drainage from the pericardial sac of the fluid products of inflammation and the treatment of adhesions in the pericardial sac or outside of it.

The wonderful nervous mechanism of the heart including the end organs in the endocardium and pericardium and their involvement in inflammatory processes complicates the problem. This mechanism must be most carefully considered in any local treatment as shown by experiments and clinical experience. The variability in the reaction of the pericardium of individual animals of the same species to the same agent is often quite inexplicable. Just as in previous experiments performed by me on the terrapin[1] in which at times irritants applied to the epicardium caused marked cardiac disturbances and often signs of general irritation, while at others no marked effect was produced, so in the human cases in which tincture of iodin has been injected into the pericardial sac there has either been no pain or a considerable reaction

* Read before the Section on Pharmacology and Therapeutics at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

1. Wilbur, R. L.: Some Relations of the Nervous Mechanism of the Heart to Drug Effects, as Indicated by Experiments on the Terrapin, THE JOURNAL A. M. A., Dec. 23, 1911, p. 2037.

with marked distress, even shock.[2] This variability may be due to the fact that the thickening of the pericardium, particularly in the presence of pus, may protect the nerve-endings. McPhedran has suggested that in pyopericardium, 2 per cent. liquor formaldehydi in glycerin be injected with the hope that similar results to those observed in empyema may be obtained. One of the possibilities in this connection is that serums or various bacterial products may be injected into the pericardium if they are of value in controlling the organisms known to cause the pericarditis under consideration. In a short series of experiments on rabbits, carried on with the assistance of Drs. E. C. Dickson and E. G. Cary, in which various irritants were injected into the pericardium to produce pericarditis, the same variability in reaction seemed evident, some animals succumbing promptly while others survived without apparent early disturbances. This may be due either to the fact that rabbits are particularly susceptible or to imperfections in technic so that the whole charge of irritant did not become well distributed in the sac.

The following is a brief summary of a series of experiments in which injections were made into the pericardiums of sixteen rabbits:

Rabbit 10, 0.75 c.c. emulsion of diplostreptococcus (from a case of bacteriemia).

Rabbit 11, 0.75 c.c. emulsion of diplostreptococcus (from a case of bacteriemia).

Rabbit 12, 0.75 c.c. emulsion, Gram-negative bacillus (infectious polyarthritis, chronic, from knee-joint).

Rabbit 13, 0.75 c.c. emulsion, Gram-negative bacillus (infectious polyarthritis, chronic, from knee-joint).

Rabbit 14, 0.5 c.c. emulsion *B. diphtheriae* (New York strain).

Rabbit 16, 0.5 c.c. emulsion *B. diphtheriae* (local strain).

Rabbit 17, 0.5 c.c. tincture of iodin, 100 per cent.

Rabbit 18, 0.5 c.c. tincture of iodin, 100 per cent.

Rabbit 19, 0.5 c.c. tincture of iodin, 50 per cent.

Rabbit 20, 0.5 c.c. tincture of iodin, 50 per cent.

Rabbit 21, 0.5 c.c. tincture of iodin, 25 per cent.

Rabbit 22, 0.5 c.c. tincture of iodin, 25 per cent.

Rabbit 23, 0.5 c.c. oil of turpentine.

Rabbit 24, 0.5 c.c. oil of turpentine.

Rabbit 25, 0.5 c.c. oil of turpentine.

Rabbit 26, 0.5 c.c. oil of turpentine.

Rabbits 10, 11, 13, 16, 18, 19 and 23 died within a few days, and showed no pericardial lesions.

Rabbit 14 died in about ten weeks, and showed no pericardial lesions.

Rabbits 12, 17, 20, 21, 22, 24, 25 and 26 were killed, May 25, 1914.

RABBIT 12 (Gram-negative bacillus from knee-joint): Some increase in fluid in pericardium, slight protuberance at tip of left ventricle.

RABBIT 17 (tincture iodin, 100 per cent.): Liver enlarged, congested, anterior mediastinum shows some adhesions. Pericardium distinctly thickened and adherent to chest wall. Is opaque and shows some small hemorrhages. Epicardium has numerous opaque areas. Myocardium apparently involved. Hemorrhages in lungs.

RABBIT 20 (tincture of iodin, 50 per cent.): Some adhesions, some increase in fluid, few opacities in auricle, few opaque areas in pericardium.

RABBIT 21 (tincture iodin, 25 per cent.): Some prominent vessels in pericardium, no thickening, some whitish deposits along coronary vessels in ventricles.

RABBIT 22 (tincture iodin, 25 per cent.): No signs of pericarditis, few opaque areas in auricles.

RABBIT 24 (oil of turpentine): No changes excepting some fibrous material in ventricular wall.

RABBIT 25 (oil of turpentine): No thickening of pericardium, no adhesions, whitish deposits along coronary vessels in auriculoventricular junction. Apparently some increase in fibrous tissue in auricular wall.

RABBIT 26 (oil of turpentine): Pericardium slightly thickened and opaque, slight increase in fluid, opaque and slightly elevated areas over both ventricles and auricles.

RABBIT 17.—*Section of Pericardium* (tincture iodin, 100 per cent.): There is fairly marked fibrous thickening of the pericardium, with moderate infiltration with round cells. In places strands of fibrous tissue invade the muscle for a considerable distance. There is apparently some round-cell infiltration around the smaller vessels in the more superficial portion of the myocardium, but this is not marked.

Thus, tincture of iodin in full strength when the primary shock was survived produced a typical pericarditis with thickening, and interference with the general circulation leading to a marked engorgement of the liver.

In some of the animals turpentine produced a slight effect. Injection of an organism cultured from a joint, the site of a chronic process, was without evident result on the pericardium except perhaps a slight increase in fluid. The two injected with a diplostreptococcus died early without pericardial lesions. The results obtained are similar to those just reported by Wenulet,[3] who produced pericarditis by the local injection of bacteria, various toxins and turpentine. Staphylococci obtained from a [illegible] produced the most marked lesions. Turpentine pericarditis ran a favorable course, but in all forms there were hemorrhages into the cardiac ganglia with some infiltration and degenerations of the nervous tissues. This was particularly marked following turpentine, in which the damage to the heart was slight in comparison to that of the ganglia. The Purkinje fibers were not found to be involved in the pathologic process. Rubino[4] found that the injection of staphylococci into an animal when the region over the pericardium was chilled by ice led to infection there. Rosenow[5] has shown that certain strains of streptococci, particularly *Streptococcus rheumaticus*, include the pericardium in their predilection for certain tissues. Rehn[6] has recently described experiments on the successful removal, under the Meltzer-Auer method of anesthesia, of portions of the pericardium, and has shown that often no adhesions form between the heart and the surrounding tissue. He has also been able to relieve adhesions by various forms of plastic operations with fat and omentum. Water-soluble substances such as indigocarmin when injected into the pericardium were found to appear within five minutes in the urine. He also by the injection of iodin and vegetable albumin into the pericardium of dogs produced marked pericarditis and found that simultaneous injections of iodipin with either the iodin or vegetable albumin limited or protected the heart from adhesions which usually form. Simple oil such as olive-oil was not found by him to be as effective as oil of sesame (iodipin). We hope to have the opportunity of continuing our experiments along these lines particularly

2. Aran and Maller, quoted by De Lorme and Mignon: Sur la ponction et l'incision du pericarde, Rev. de chir., 1895, xv, 796; ibid., 1896, xvi, 56.

3. Wenulet, F. F.: Russk. Vrach, 1913, No. 49; abstr., Deutsch. med. Wchnschr., 1914, xl, 38.

4. Rubino, A., quoted by Eichorst: Les péricardites expérimentales et bacteriques, Arch. ital. de biol., 1892, xvii, 298.

5. Rosenow, E. C.: Etiology of Acute Rheumatism, Articular and Muscular; Jour. Infect. Dis., 1914, xiv, 78.

6. Rehn, L.: Zur experimentelle Pathologie des Herzbeutels, Arch. f. klin. Chir., 1914, cii, 1.

to see if the injection of some substance such as liquid petrolatum into the pericardium will resist absorption and limit adhesions and also whether or not acute processes can be modified by harmless local injections. Up to date the various experiments on pericarditis have not added much to our methods of treatment, and even the numerous studies made on the cadaver have been of limited service because tried on the normal pericardium instead of that previously subjected to inflammation with consequent loss of elasticity and strength. We must then base our therapeusis at present largely on analogy and on clinical experience.

CLASSIFICATION

For purposes of treatment, pericarditis can best be classified as:

Acute:
- *A.* Dry.
- *B.* Serofibrinous:
  1. Diffuse, with epicardial involvement.
  2. Circumscribed, usually about the base of the heart and the origin of the great vessels, or posterior (Cassaet[7]).
- *C.* With effusion:
  1. Simple.
  2. Purulent.

Chronic:
- *A.* With effusion (exudate or transudate).
- *B.* With adhesions:
  1. Adhesion bands.
  2. Total obliteration.
  3. External adhesions—anterior, posterior, etc.

In general we can state that the processes mentioned above are due to the many kinds of organisms capable of producing inflammation or pus, and that access to the pericardium may be obtained by extension from neighboring parts, but usually is through the arterial blood-stream. This is particularly true in rheumatic pericarditis and the pericarditis of pneumonia, tonsillitis and the various primary septic processes. The pericarditis of scurvy, which is readily treated by proper food and drainage if necessary, and that form found in late chronic nephritis which is rarely affected by treatment I shall not discuss here.

While our treatment of all forms of pericarditis is far from specific, yet early recognition is of the greatest importance and unfortunately the disease is commonly overlooked. If anything definite is to come from therapeutic measures, the early stages of all of the forms of pericarditis are the ones most susceptible to the measures that we know how to employ.

EARLY DIAGNOSIS

The main points on which early diagnosis of dry and serofibrinous pericarditis depend are:

1. Feeling of oppression or peculiar tension over the cardiac region with a sense of anxiety.

2. Pain, spontaneous, often nocturnal, noticed most frequently over the heart, but also within the chest, radiating at times into the abdomen near the navel, also to the back, the left shoulder and even up to the left side of the neck. The pain may be increased by pressure at times and there is apt to be tenderness just below the left nipple in association with it. Since this tenderness also occurs in many patients with beginning decompensation and dilatation of the ventricles, not too much stress must be laid on it. Pain is also often markedly increased by movement, deep inspiration, swallowing and cough. In some patients pain is entirely absent.

3. Marked cardiac irritability with abnormal increase in the heart-rate on change in position or on exercise. Irregularity is common, evidently suggesting the involvement of the nervous apparatus. This irritability is apt to persist for some time even after the acute process seems to have subsided.

4. A friction rub, diastolic, systolic, or both, heard most clearly at some particular point over the heart and variable at times with change in position. Reliance cannot be placed on friction alone without other evidence, since it may come from the so-called *Sehnen-Flecken*, the significance of which is still a matter of dispute.

5. Fever is not always present, but pericarditis is often the cause of a cryptic fever. There may also be evidences early of a marked cardiac disturbance—dyspnea, cyanosis, etc., but these are not distinctive of the condition.

It is encouraging that we see occasionally a pericarditis which rapidly disappears. It is the only evidence at times of an infection probably with the *Streptococcus rheumaticus*. It is also striking that a complete return to normal can take place even when there is most marked inflammation of the pericardium. McPhedran describes a patient in whom there was apparently complete recovery from a well-marked fibrinous condition which distended the pericardium so much that it led to a number of fruitless aspirations. Just why some patients recover readily without apparent damage while others, in whom evidently the etiology is the same, are left with adhesions, even obliteration of the sac itself, is quite unknown. The amount of involvement of the surrounding tissues, particularly the myocardium and endocardium and pleura, no doubt plays a prominent part in the clinical course of many of these patients, and evidence should always be sought in pericarditis for such involvement. The main therapeutic indications are to give physical rest, combat the local inflammation, and when rheumatism is suspected, administer promptly the salicylates in quantity. The experience of Eichhorst, who describes the prompt relief seen in patients with pericarditis without other treatment than the salicylates and without further disease manifestations, has no doubt been shared by all of us.

LOCAL MEASURES

An ice-bag applied at intervals is probably the most effective whenever the heart-action is markedly accelerated. Romberg doubts the wisdom of its use in cases with a rheumatic origin, and the work of Rosenow showing the favorable effect of low temperature on the growth of *Streptococcus rheumaticus* indicates the soundness of his belief. It is difficult to state whether the favorable effect of the cold is due to the general influence of the lowered temperature on the activity of the inflammatory process or is the result of a vasomotor reflex. Heat gives more relief in certain patients, particularly the aged and asthenic. The application of leeches, painting over the heart with tincture of iodin, the use of Spanish fly blisters, either the large ones recommended by Bamberger or the numerous small blisters advised by Caton, have often proved of marked value in my experience. The galvanocautery is a satisfactory form of counter-irrita-

7. Cassaet, E.: La péricardite postérieure, Paris, Masson et Cie., 1914.

tion. In general, it is most important for the patient to be put on a simple diet, to be given salines so as to avoid strain at stool, to be kept in partially upright position and above all to have the pain in the chest relieved by some form of opium. Morphin hypodermatically may be necessary, but since it often produces subsequent vomiting with strain on the heart, it is better to use regularly suppositories of opium, hyoscyamus and belladonna when they prove effective. Veronal must be used with great care in severe pericarditis, as in fact in all cardiac lesions, since at times it has a marked depressing effect on the heart. It is most important in this connection to remember that patients presenting various stenocardiac evidences, particularly when they are non-smokers, not of neurasthenic or hysteric habit and when fever is present, should be investigated for the pericardial rub that may clarify the picture. Stimulants should not be regularly given, but the usual ones, particularly caffein and camphorated oil, should be available for the sudden emergency which is apt to arise in any patient with severe pericardial inflammation. Quinin is often of value when there is a high temperature in pericarditis. With signs of decompensation, digitalis is to be used. Some have thought that its effect in increasing the force of the systole might also interfere with the formation of adhesions, but it is difficult to judge whether a rapid rate or a forcible beat is most effective in this particular.

ACUTE PERICARDITIS WITH EFFUSION

Treatment.—Here also early recognition is of greatest importance. The marked change in the elasticity and extensibility of the pericardium when it is the site of inflammatory processes produces such conditions that the experiments of Rotch,[8] Ebstein[9] and many others are not a criterion as to what may happen in a pericardium in which effusion is taking place. The greatest difficulty is the confusion with dilatation of the chambers of the heart and the fact that clinical experience and such experiments as those of François Frank[10] have shown that the effect of a large effusion on the heart is similar to that of the vasomotor paralysis seen at times in acute infections.

Early Diagnosis.—The surest sign in doubtful cases is the gradual increase of the cardiac dulness with the coalescence of the borders of the absolute and relative areas of cardiac dulness. With this there is often the somewhat characteristic percussion figure of a blunt triangle with the base below and the left border extending beyond the apex-beat, an obtuse angle of dulness at the right cardiohepatic junction and muffled heart-sounds often with friction over the left ventricle. Roentgen-ray observations are often of much value. The danger of the sudden increase in the amount of fluid must be recognized when the pulse becomes rapid, small and irregular with marked dyspnea, for sudden paralysis of the heart is possible. The general and local symptoms are often alike in both purulent and simple effusion, and in both effusions may be present without physical signs.

The only satisfactory treatment for such effusions, either when acute and menacing or when they fail to absorb after two weeks, is aspiration. Treatment by diaphoretics, purgation and diuretics may be carried on with very great care if the amount of fluid is not great, and as it disappears often, they may seem at times to be effective. The tolerance of the heart for large amounts of fluid in the pericardial sac when it forms slowly is remarkable.

Aspiration.—Numerous studies have been made as to the best method of aspirating the pericardium. It now seems most probable that even in large exudates there may be only a very thin layer of fluid between the heart and the chest wall, or the heart may be entirely uncovered anteriorly, not showing the sinking due to its higher specific gravity that has been so often described. There have been many changes in the technic recommended. The methods of Dieulafoy,[11] Schaposchnikoff,[12] Aporti and Figaroli,[13] De Lorme and Mignon,[2] Curschmann and others are all at variance. We can safely say that aspiration should be preceded by puncture with a small syringe and that it should be, if possible, done in the fifth interspace about 1 inch inside of the area of absolute cardiac dulness. Here there is some danger of going through the pleura, but usually it is adherent. The danger of puncturing the heart except in the strong left ventricle is insignificant. When there is marked dulness to the right of the sternum, puncture can be made there, but the danger is greater owing to the thinner wall of the right ventricle. It is a safer procedure to make a small incision in the skin under local anesthesia if necessary as deep as the pericardium when a pyopericardium seems probable. Aspiration is best done with a very sharp trochar of the Curschmann type, draining either by siphon, syringe or aspirator. A curved trochar can be used to reach the posterior pericardium, or better still a fine rubber catheter passed through the trochar to explore the cavity. The character of the effusion as discovered by the exploratory puncture is of great importance in deciding on the treatment which should be adopted. Barkan and Lucas[14] recommend the same treatment for pyocardium as for empyema. If a distinctly purulent fluid is obtained, incision and drainage should be done promptly, laying bare the pericardium under the cartilage of the fourth or fifth rib and making a careful opening without going through the pleura. The mammary arteries can be tied if necessary. The presence of hemorrhagic fluid does not necessarily mean that there is a tuberculous or malignant condition present, as the capillaries of the pericardium are apt to be broken readily in the adhesions which are torn by the movements of the heart. The removal of a small amount of nonpurulent fluid is often sufficient to stimulate the absorption of the rest, but as much as possible should be withdrawn. The fact that very thick serofibrinous exudates may simulate fluid, and that pleurisy with effusion is often likewise present, should be borne in mind.

Our present information does not warrant us in injecting remedial substances into the pericardial sac after the withdrawal of simple effusions, and great care should be used even in tuberculous pericarditis

8. Rotch, T. M.: Absence of Resonance in the Fifth Right Intercostal Space Diagnostic of Pericardial Effusion, Boston Med. and Surg. Jour., 1878, xcix, 389.
9. Ebstein: Discussion of Rotch's Sign, etc., Virchows Arch. f. path. Anat., 1892, cxxx, 418.
10. Frank, François: Recherches sur le mode le production des troubles circulatoires dans les épanchements abondants du péricarde, Gaz. hebd. de méd., 1877, xiv, 455.
11. Dieulafoy: Traité de l'aspiration des liquides morbide, Paris, Masson et Cie., 1873, p. 264.
12. Schaposchnikoff: Zur Frage über Pericarditis, Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1897, ii, 86.
13. Aporti and Figaroli, F.: Zur Lage der akut entstandenen Ergüsse im Herzbeutel, Centralbl. f. inn. Med., 1900, xxi, 737.
14. Barkan, H., and Lucas: Acute Suppurative Pericarditis in Infancy, Boston Med. and Surg. Jour., 1912, clxvi, 444.

in injecting foreign substances such as iodin and formaldehyd because of the possibility of damaging the nervous mechanisms of the heart with possible collapse. The chronic forms of pericarditis with effusion are to be handled about as are the acute ones except that the measures used can be somewhat more radical.

Pericarditis with Adhesions. — The treatment depends largely on how exact a diagnosis can be made in a condition that is usually not recognized. As Tornai[15] has pointed out, these patients all present individual characteristics since there is marked variance in the adhesions, their direction and their strength. A few patients show the depression on deep inspiration which he calls "inspiratory funnel-breast," "Complete obliteration of the pericardium may occur without clinical evidences" (Smith[16]), but there are apt to be some signs of cardiac involvement and decompensation whenever adhesions are of the type that cause symptoms. This is apt to be manifested particularly by enlargement of the liver.

The Roentgen ray at times gives valuable evidence of the extent and course of the adhesions. In some patients the pain when the pericardium is adherent is similar to that of true angina pectoris. In acuter attacks this has been ascribed to the inflammation extending to the cardiac nervous mechanism, and these symptoms may be grave enough to be followed by death, although usually the pain appears only on exertion or on exposure to cold, or is a manifestation of beginning decompensation. Unfortunately there is apt to be associated with many cases of pericarditis a certain amount of myocardial change; but this is not necessarily true, as the myocardium often remains intact unless a secondary hypertrophy and dilatation follows the resulting pericardial adhesions.

A few adhesions probably mean but little, and can be regarded as the natural scar following inflammation; but when they become thick and firm and interfere with either ventricle or auricle, or lead to obliteration or involve the mediastinum or neighboring pleura, they cause marked disability. This is particularly noticeable when they involve the great vessels running from the heart. Taylor has shown that about one-third of these patients show pleural adhesions.

Pain when present is often difficult to control, but is frequently relieved by such remedies as the salicylates (aspirin, etc.), with local warmth and physical rest. Deep breathing and moderate exercise at the proper periods are probably of value in preventing adhesions both of the pericardium and the pleura, and also in bringing about their destruction by stretching the connective-tissue cells.

When the external adhesions are so extensive that systolic retraction of the intercostal spaces (Broadbent's sign) or systolic retraction of the thorax over the heart is noticed, operative measures should be considered, since when the adhesions are external they can be dealt with surgically, as undoubtedly could also adhesions between the epicardium and the sac provided they were recognized and localized.

If we can eliminate aortic stenosis and general atheroma as causes of the retraction, an early operation, the so-called "cardiolysis," which has been brought into more extensive use by Brauer,[17] is in order. His reports are quite satisfactory, and a recent one by Delagenière[18] of thirty-eight cases in which thirty-one gave good results is worthy of attention. The mechanical interference with the cardiac chambers is often of the greatest consequence. The amount of damage done is greater if the myocardium is at the same time involved. When the endocardium is affected, the opportunity for surgical relief is not so great, but nevertheless may be valuable in reducing disability. Whether or not the adhesions interfere with the diastole or systole is not important. The Brauer operation does not require penetration of the pericardial sac, but under local or general anesthesia the cartilages of the fourth, fifth, sixth and seventh ribs for from 10 to 12 cm. from the sternum are removed. The sternum is not disturbed. The rib periosteum can be removed or not, according to the condition. Its removal prevents bone regeneration, but increases somewhat the danger of the operation. The results obtained depend largely on the extent of the adhesions and the condition of the cardiac muscle.

It seems clear that we have in Brauer's method or in some one of the other forms of operative relief from these adhesions a method of prolonging life which should be tried much more often than is at present the rule. Early diagnosis of the condition before marked secondary myocardial changes have taken place is again here of importance. When we have a definite retraction of the lower left ribs with systole with the cardiac dulness not changed by respiratory movement and with the lateral postural movement of the heart absent, especially if the Roentgen-ray evidence fits into the picture, we can expect good results from the operation. The time may come when a direct intrapericardial operation will be desirable, but now certainly some such operation as that of Brauer is the one from which the best results can be obtained. In this operation it is desirable to make a small opening into the pericardium to be sure that the diagnosis is correct before the more extensive removal of the ribs is practiced.

CONCLUSIONS

1. The accessibility of the pericardium makes local treatment valuable and surgical treatment possible, and leads to the hope that further study may permit the application of remedies directly to the interior of the acutely or chronically inflamed sac. Induced pericarditis in animals offers a good field for study along this line.

2. Early diagnosis of dry or serofibrinous pericarditis permits of the most effective treatment and must be based largely on (*a*) vague feeling of oppression in the chest or actual pain, (*b*) cardiac irritability and (*c*) friction rub.

3. Early aspiration, preferably to the left of the nipple-line, is of value in the diagnosis of pericardial effusion, and tapping should be practiced when the heart-action is markedly disturbed from apparent increase in intrapericardial pressure.

4. The Brauer method should be more often used in patients with the evidences of pericarditis with adhesions and with early signs of cardiac hypertrophy

15. Tornai, Josef: Beiträge zur Symptomatologie der adhäsiven Pericarditis, Berl. klin. Wchnschr., 1913, No. 39, p. 1792.
16. Smith, William H.: Chronic Adherent Pericarditis: A Study of Sixty-Two Cases, The Journal A. M. A., Sept. 6, 1913, p. 739.
17. Brauer, L.: Die Behandlung der Herzbeutelentzündungen und Verwachsungen, Hamburg. med. Ueberseehefte, 1914, i, 7.
18. Delagenière, H.: De la péricardiolyse dans certaines affections cardiaques ou de la thoracetomie prépericardique, Arch. d. mal. du cœur, 1913, vi, 633.

or dilatation. It will often diminish disability and markedly prolong life.

5. Careful attention should be paid to the differentiation of pain in the region of the heart due to pericarditis (acute or chronic) from true angina pectoris, since the prognosis is necessarily so different. Careful and repeated examinations for a friction rub should be made over the whole cardiac area in patients with precordial pain.

Lane Hospital, Clay and Webster Streets.

ABSTRACT OF DISCUSSION

DR. SAMUEL JAMES MELTZER, New York: In pericarditis it may be necessary to make a wide opening or to remove, if necessary, one or two ribs and sometimes five ribs. I had an experience some eighteen years ago with a case in which we did not agree on the location of the trouble. I said it was pericarditis with effusion and my consultant said it was empyema and the patient was operated on. Two weeks later when seeing the patient I said the pleural cavity had not been opened but instead the pericardium and during these two weeks it was being washed out twice a day with corrosive sublimate. The patient died three weeks later, but it gave me an idea as to how much the pericardium can and will stand.

THE ABUSE OF NORMAL SALT SOLUTION*

LAWRENCE LITCHFIELD, M.D.
PITTSBURGH

The presence of a relatively large proportion of sodium chlorid in our bodies harks back to the composition of sea-water at the time when our ancestors were ameboid inhabitants of the primeval ocean. To a certain amount of sodium chlorid our organisms are habituated, and that amount has become essential to our well-being; larger amounts, however, are toxic unless promptly eliminated.

The regulation of the inorganic composition of the blood was the primal function of the simple organs from which our kidneys have developed. The elimination of the waste-products of metabolism came later. Our kidneys now regulate blood concentration and also the proportion of the various ions, preserving the acid-base equilibrium; and, in addition to these primal functions, the kidneys must now dispose of large amounts of organic waste matter—toxic substances of endogenous and exogenous origin.

These waste products are often far more toxic than the excessive amounts of inorganic salts. Nevertheless, since the primal function of an organ remains ever its predominant activity, if the inorganic balance in the blood is disturbed, that disturbance receives the more or less exclusive attention of the kidneys, though organic acids and toxins may in consequence accumulate in the blood-stream.[1] Hence the danger of flooding the organism with inorganic salts, which peremptorily demand prompt elimination. Hence, also, the fact that an excess of sodium chlorid may cause symptoms which vary in accordance with the particular toxins which happen to be retained, because the kidney function is more or less monopolized by the elimination of the excess of sodium chlorid.

A harmful amount of sodium chlorid in the human body results more frequently from the employment of normal salt solution. This solution is used for the following purposes:

1. For increasing the volume of the blood, as after severe hemorrhage or prolonged starvation.

2. To wash out toxins from the system, as after anesthetics, gas poisoning, and certain infectious or toxic diseases, by raising the blood-pressure, stimulating the action of the kidneys, etc.

3. To increase the resistance of the organism to disease.

4. To counteract the effects of shock.

5. By enteroclysis, to relieve thirst when water cannot be taken by the mouth.

6. For carrying out the so-called Fischer treatment of nephritis.

In the latter case, the solutions used are rendered still more dangerous and toxic by the increased percentage of sodium chlorid.

The solutions used for the foregoing purposes may be introduced into the system by the following routes: first, by the mouth and stomach; second, by the rectum or colon—the "Murphy drip"; third, by hypodermoclysis; and fourth, by direct infusion into a vein.

Because in certain postoperative cases the patients were found to stand in need of an artificial increase to the blood-serum, it was decided to give them water by the bowel. Because living laboratory specimens *in vitro* did better in isotonic solutions and because it was believed that the mucous membrane would be irritated by contact with any solution that was not isotonic, sufficient salt was added to the water to render it isotonic, for enteroclysis. With a rapidity which is hard to understand, the postoperative administration of large amounts of salt solution by the Murphy method has become almost routine in a large number of surgical clinics, with far too little regard to the needs of the individual case and the dangers involved in this procedure. The argument seems to be, if it is good in certain cases, why not give it to all and thus run no risk of missing any cases that really need it?

While evidence of the harmful effects of sodium chlorid has been accumulating, and while the conviction has been growing in the minds of many that this treatment is greatly overdone and productive of much harm,[2] Dr. Trout[3] has demonstrated by a series of over two thousand cases that ordinary hydrant-water is better than salt solution for such treatment. More

* Read before the Section on Pharmacology and Therapeutics at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

1. Macallum, A. B.: The Inorganic Composition of the Blood . . . and Its Origin, Proc. Roy. Soc., B, 1910, lxxxii; The Ancient Foundations of Heredity, Can. Med. Assn. Jour. January, 1911.

2. Rössie: Gibt es Schädigungen durch Kochsalzinfusion? Berl. klin. Wchnschr., Sept. 18, 1907.
Blum: Les dangers des injections intraveineuses alcalines: effets toxiques du sodium, Sem. med., 1911, xxxi, 433; abstr., THE JOURNAL A. M. A., Oct. 21, 1911, p. 1408.
Geyser: The Use and Abuse of Normal Salt Solution, Am. Med., January, 1914, p. 57.
Christian: Experimental Nephritis, Boston Med. and Surg. Jour., 1908, clviii, 416.
Lepine, J.: Hystérie, insuffisance rénale, rétention chlorurée, Rev. de méd., September, 1911.
Jackson and Elting: Studies from the Bender Hygienic Laboratory, 1908.
Burnett, Theodore C.: On the Production of Glycosuria in Rabbits by the Intravenous Injection of Sea Water Made Isotonic with the Blood, Jour. Biol. Chem., 1908, iv, 57.
Guthrie, C. C.: The Effect on the Kidneys of Temporary Anemia, Alone and Accompanied by Perfusion, Arch. Int. Med., March, 1910, p. 232; Quart. Bull. Med. Dept. of Washington Univ., December, 1908, p. 47.
Bain, John: Excessive Ingestion of Salt Producing Oedema, Brit. Med. Jour., Oct. 5, 1912, p. 880, Stevenson, A.: Brit. Med. Jour., Dec. 28, 1912, p. 1749.

3. Trout: Proctoclysis, THE JOURNAL A. M. A., May 4, 1912, p. 1352; Southern Med. Jour., 1913, No. 12, p. 791; Surg. Gynec. and Obst., May, 1913, p. 560; Progr. Med., June, 1914.

water is absorbed, the postoperative thirst is more quickly relieved, and the toxic effects of salt are avoided.

It should go without saying that neither of these methods of postoperative enteroclysis should be employed without special indications, and then only in the absence of edema or symptoms of threatened cardiac failure from overburdening of the cardiovascular system. In toxic conditions with no evidence of cardiac insufficiency an increase in the mass of circulating blood, with the consequent increased activity of the kidneys, is certainly beneficial. The same is true when the toxic effects of the anesthetic persist unduly. When there is prostration from loss of blood during the operation or from diminution of the quantity or quality of the blood before operation, as from persistent vomiting or diarrhea, toxic conditions or inanition, an increase of the volume of the blood-stream is strongly indicated. In true shock, that is, vasomotor paralysis, particularly of the splanchnic vessels, often accompanied by acute dilatation or overdistention of the right heart, the addition of any considerable amount of fluid to the afferent vessels seems to me to be distinctly contra-indicated. In such cases the flickering spark of life may be snuffed out by the extra load put on the heart. Postoperative thirst can be relieved by very moderate amounts of a suitable solution by enteroclysis. This does not involve the dangers incident on the employment of large amounts of fluid.

The classic demonstration of Widal and the work of Minkowski, von Noorden, Friedrich Müller, Kraus, Magnus Levy, H. Strauss and many others have demonstrated beyond cavil a definite relation between chlorid retention and edema—the inability of damaged kidneys to eliminate urine high in sodium chlorid, the consequent chlorid retention, water retention, and toxic effects on the tissues—overburdening the cardiovascular system and producing more or less general edema.[4]

Just as this useful knowledge of chlorid metabolism was beginning to make itself felt in the treatment of cardiorenal cases, postoperative and other toxic cases, a book appeared, written by a professor of physiology who is also an internist, and endorsed as a prize essay by a body of judges whose names rightly demand respect.[5] This book calmly disregarded all the work just mentioned and has seemed to stem the beneficent spread of knowledge and plunge the medical profession with renewed enthusiasm into fallacious practices. Cardiorenal cases that we had come to believe were suffering from chlorid retention, water retention, and many consequent evils, are now treated exclusively by very many conscientious physicians with alkalies, sodium chlorid and excessive amounts of water. Protests from research laboratories have been published by Henderson, Palmer, Newburgh,[6] Moore[7] and Sellards[8] but these are slow in reaching the circles where the harm is being done.

4. Borchardt: Deutsch. med. Wchnschr., 1912, xxxviii, 1723.
Smith, Richard M.: Recent Contributions to Our Knowledge of Nephritis, Am. Jour. Dis. Child., May, 1914, p. 389.

5. Fischer: Nephritis, 1911 Cartwright Prize Essay, New York, John Wiley & Sons, 1912.

6. Henderson, Palmer and Newburgh: Jour. Pharm. and Exper. Therap., 1914, v, No. 5. Newburgh: Boston Med. and Surg. Jour., 1913, clxix, 40.

7. Moore, A. R.: Fischer's Theory of Edema and Nephritis, The Journal A. M. A., Aug. 10, 1912, p. 423; Edema and Nephritis, ibid., Feb. 1, 1913, p. 345; A Controverted Theory of Nephritis, ibid., June 20, 1914, p. 1971.

8. Sellards: The Essential Features of Acidosis, etc., Johns Hopkins Hosp. Bull., May, 1914, p. 141. See also review of Dr. Fischer's book, Arch. Int. Med., May, 1912, p. 637. Comment on G. Salus, Biologische Versuche mit Organplasma, Biochem. Ztschr., 1914, lx, 1.

The mechanical effect of the introduction of a large amount of any isotonic or hypotonic solution to the blood-stream, in cases in which heart is almost spent or in which hypertension has reached a dangerous degree, may promptly lead to disaster. An example of each of these two varieties has come under my personal observation within the past year.

Case 1.—To a patient with a double pneumonia, in an extremely toxic condition but with apparently a good heart and no evidences of edema of the lungs, an isotonic intravenous infusion was ordered. The intern who took the order was doing double work and did not get around to this case for four or five hours. The patient then had edema of the lungs and tracheal râles. The infusion, however, was given without consulting the physician who gave the order and the patient promptly died.

Case 2.—A patient with advanced cardiovascular fibrosis, with a systolic pressure of 220, was found by the physician whom he consulted to have albumin and casts. A flushing out of the kidneys was decided on and 3 quarts of water and 3 quarts of milk were ordered to be taken in each twenty-four hours. In about six weeks the patient began to bleed from the nose, and this bleeding continued for twelve days off and on, causing great anxiety and necessitating repeated plugging of the anterior and posterior nares. In this case the profuse and continued hemorrhage from the nose probably saved the patient's life for the time being.

A hypertonic solution, however, provided it is nontoxic, may do yeoman service in such a case, lessening the heart's load by its dehydrating and diuretic effects.

If the case really needs a prompt addition to the blood-serum, the most prompt, direct, scientific and comfortable way of bringing this about is by venous infusion. Thus we avoid the uncertainty of absorption from the digestive tract, and the great discomfort of hypodermoclysis.

The advent of salvarsan has given a great impetus to intravenous medication and widely popularized its technic. But when we turn from enteroclysis to the more scientific intravenous infusion we naturally meet new dangers, which certainly have not as yet received proper consideration. Water for intravenous use must be not only sterile but also non-toxic. The fact that water has been freshly distilled or sterilized by boiling does not prove that it is innocuous. It may contain many harmful products of distillation or toxic substances set free from killed bacteria. The original source of the water should receive careful consideration. Water containing much organic matter should not be used for distillation if any other can be obtained. If it must be used, porcelain filtration should precede repeated distillation. The temperature of the solution as it enters the vein is also highly important. A thermometer should be inserted in the tubing near the needle, in order that the temperature of the solution as it enters the circulation can be accurately controlled.

The beneficent effects of directly increasing the blood-serum in many surgical conditions is well established and, in strictly medical cases, Osler and many others attest its value. I have myself seen good effects follow its use in pneumonia, typhoid fever and other conditions too often to doubt its efficacy.

While recognizing the great value of artificial serums in the way of deintoxication, diuresis, cardiac stimulation, etc., I can find no justification for the sodium chlorid except in the case of a patient actually suffering from chlorid starvation—as possibly after a too vigorous application of the salt-free diet—or for control of obstinate recurrent pulmonary hemorrhage.

Haig[9] has recently asserted that a deficiency of sodium chlorid plays an important rôle in the etiology of neurasthenia and various associated conditions.

In dextrose, on the other hand, we have a substance which has been recognized by physiologists since the days of Claude Bernard as in the highest degree non-toxic, diuretic, nutritious and easily assimilated. If introduced slowly, either by enteroclysis or by intravenous infusion, in isotonic or hypertonic solutions, very large amounts will be utilized by the organism without the occurrence of glycosuria, or with the loss through glycosuria of only a negligible percentage of the sugar administered.

In the summer of 1907, at the suggestion of my associate, Dr. James P. McKelvy, I substituted glucose solution for the usual normal salt solution in my wards at the West Penn Hospital. We were running a large number of typhoids, from sixty to seventy-five per month, with a mortality of from 9 to 10 per cent. Enteroclysis was administered in all cases in which condition of the patient seemed to indicate such an addition to the blood-stream. We noted a decided advantage from the substitution of glucose for the sodium chlorid previously employed. If my memory serves me, glycosuria was not noted in any of the cases.

In March, 1909, Dr. McKelvy carried out the following experiment at the Allegheny General Hospital, which I shall report in full, as it has never been published:

CASE 3.—A patient aged 48, weight 142 pounds, was admitted for bronchial asthma, in an emaciated condition, with moderate emphysema, arteriosclerosis and slight cardiac hypertrophy. He was kept in bed and fed by mouth milk and other liquids, to which were added milk-sugar. Enteroclysis was given continuously and consisted of 15 per cent. glucose solution. The expelled fluids were collected in a rubber bed-pan, the twenty-four hour amount mixed and measured and the sugar determined by fermentation. This was continued for forty-eight hours. The stools were saved and analyzed for sugar for several days. For the first twenty-four hours following the test the amount was 35 gm.; after that it was negligible. The record of sugar absorbed is given in the accompanying tabulation.

The urine at no time showed sugar, although the patient absorbed 1,326 gm. and 1,237 gm. on the first and second days, respectively. If we take the blood-weight of a 70-kg. man as about 5,000 c.c., then 1,326 gm. would represent 26 per cent. of the blood-weight absorbed in twenty-four hours, or 1.08 per cent. in one hour, or 0.18 per minute. It represents over 5,400 calories in twenty-four hours.

If we assume that liver, muscles and blood were drained of sugar, the amount absorbed would restore, during the first day, their normal content—liver 150 gm., muscles 150 gm., blood 10 gm., and still leave over 1,000 gm. to be accounted for.

Recently a great deal of attention has been paid in Europe, particularly in France, to the use of hypertonic solutions of dextrose intravenously. Enriquez[10] reports the use of a 30 per cent. solution intravenously in more than fifty patients, giving from 250 to 300 c.c., repeated three or four times in the twenty-four hours. The essential feature in the technic is that the hypertonic dextrose solution enters the blood-stream very slowly, one hour being occupied for the infusion of from 250 to 300 c.c. Enriquez asserts that when thus given the glycogen is stored in the liver and muscles, including, of course, the myocardium, and the glycemia varies within normal limits rarely, and then only for short periods passing the three parts per thousand, which was found by Claude Bernard to be the point at which glycosuria would appear. I might mention here that Wilenko[11] asserts that the presence of large amounts of sugar in the blood modifies the permeability of the kidneys for sugar, the effect being first a transient increase, and then a decrease of renal permeability; also that sugar solutions affect the osmotic pressure much less than salt solutions.

Enriquez found 4 or 5 gm. of glucose at the most in the urine during the first two hours after infusion, and none later. Even in two cases of alcoholic cirrhosis with ascites the result was the same. In none of the cases was sugar found in the feces. Examination of the blood showed no evidence of hemolysis, no change in the red blood-corpuscles, no icterus, and no blood-pigment in the urine. Some of his patients received as many as thirty intravenous infusions.

RECORD OF ABSORPTION OF SUGAR IN CASE 3

FIRST DAY

Solution administered by enteroclysis, containing 15 per cent., or	8,192 c.c.		1,200 gm. of glucose
Solution expelled containing 5.75 per cent., or	7,496 c.c.		430 gm. of glucose
Balance of glucose absorbed by bowel			770 gm.
Sugar in milk foods		90 gm.	
Lactose by mouth		466 gm.	
Total sugar by mouth			556 gm.
Glucose by rectum			770 gm.
Total sugar absorbed			1,326 gm.

SECOND DAY

Solution administered by enteroclysis, containing 15 per cent., or	7,650 c.c.		1,147.50 gm. of glucose
Solution expelled containing 6.1 per cent. or	7,810 c.c.		476.41 gm. of glucose
Balance of glucose absorbed by bowel			671.09 gm.
Sugar absorbed in food		86 gm.	
Milk-sugar by mouth		480 gm.	
Total sugar by mouth			566 gm.
Glucose by rectum			671 gm.
Total sugar absorbed			1,237 gm.

Urine	*Before test*	*Second day of test*
Amount in 24 hours	2,100 c.c.	1,800 c.c.
Total N	10.5 gm.	12.30 gm.
Urea	15.9 gm.	21.60 gm.
Urea N	7.4 gm.	10.08 gm.
Percentage of urea N	70 plus	82 plus

Microscopically, occasional hyaline cast.

Estimating the caloric value of dextrose as four to the gram, one can see at a glance the great nutritive value of this treatment. Enriquez lays great stress on the dangers of chlorid retention when salt solutions are used and on the fact that dextrose in hypertonic solutions may be used in cases in which any isotonic solution, and particularly isotonic saline solution, is contra-indicated, as in cases of general edema or edema of the lungs, with tracheal râles, because the dextrose is absolutely non-toxic and because the hypertonic solution actually draws water from the tissues into the blood-stream. He reports in detail a case of bronchopneumonia in a man aged 67, with a temperature of 104 F., pulse 150 with fetal rhythm, tracheal râles, carphologia, and urine about 200 c.c. in twenty-four hours. This patient promptly improved as soon as the hypertonic dextrose infusions were instituted. In another case, one of carbonic monoxid poisoning, the

9. Haig: Med. Rec., New York, 1914, lxxv, 1017.

10. Enriquez: Presse méd., Feb. 14, 1914; abstr., THE JOURNAL A. M. A., March 28, 1914, p. 1054.

11. Wilenko: Zur Wirkung intravenöser Einspritzungen, u. s. w., Arch. f. exper. Path. u. Pharmakol., 1911, lxvi, 143.

patient, who was brought in cyanosed, semicomatose, with rapid thready pulse, high temperature, rigidity of the neck, etc., received a liter of the 30 per cent. solution of dextrose intravenously every day for a week, with recovery. The remainder of his cases included cases of advanced uremia with oliguria, acute inanition, profound prostration in typhoid fever, postoperative conditions, and as a preparation for operation in desperate cases. In certain cases of cardiac edema, with hyposystole or asystole, the intravenous infusion was preceded by phlebotomy. In these cardiorenal cases, he noted a prompt and very satisfactory diuresis, together with a marked improvement of the tone of the heart-muscle. He therefore asserts that all cases in which the clinical danger is measured by the diminution of the urine are benefited by this treatment.

Beddard[12] asserts that dextrose is an active diuretic, which, though it diminishes the percentage of sodium chlorid in the urine, increases the total elimination.

Fleig[13] states that of all known substances, glucose is by far the least toxic, much less toxic than sodium chlorid and far more diuretic and at less expense to the kidneys. To the diuretic effect of lavage of the isotonic solution, the hypertonic solution adds diuresis by dehydration of the tissues. Accompanying this there must go on a deimpregnation of the tissues as regards waste products and toxic substances. When there is no particular indication for the dehydration or deintoxication of the tissues, isotonic solutions may be used, but in all urgent cases hypertonic solutions are strongly indicated. Fleig asserts that the direct stimulating effect on the heart-muscle by the dextrose and its effect on the liver, increasing the antitoxic function of the latter organ, make it particularly indicated after anesthetics, and for that purpose he advises the addition of a small amount of calcium chlorid to the solution—from 0.2 to 0.4 per cent. He has noted relief of postoperative vomiting after the use of dextrose. He prefers isotonic dextrose solutions to salines as a diluent for salvarsan in either acid, alkaline or neutral solutions. This permits its administration in cases in which the condition of the heart or kidneys contra-indicates the use of sodium chlorid.

When the organism has been already dehydrated by vomiting, diarrhea, or hemorrhage, Fleig advises the use of a hypotonic solution of dextrose—20 gm. to the liter, or 40 gm. of lactose. In these cases, a hypotonic solution of sodium chlorid may be employed if there is no contra-indication in the form of a nephritis. In cases of acodisis, he recommends the combination of dextrose with sodium bicarbonate—from 2.5 to 10 per cent. dextrose, and from 0.7 to 3 per cent. sodium bicarbonate.

CONCLUSIONS

1. The administration of any artificial serum as routine postoperative practice is questionable therapeutics.

2. Too much water may fatally embarrass the heart.

3. Too much salt may fatally embarrass the kidneys.

4. When fluids cannot be taken by the mouth, thirst may be relieved by tap-water or by isotonic dextrose solution given by enteroclysis. The dextrose solution is preferable when there is danger of acidosis and in all cases of inanition.

5. When there is a distinct indication for an artificial addition to the amount of the circulating blood-serum, this may best be accomplished by the use of dextrose solution: isotonic (5.1 per cent.) by enteroclysis; isotonic, hypertonic (up to 30 per cent.), or hypotonic (2 per cent.), by intravenous infusion.

6. There are no contra-indications for the use of dextrose, but often serious contra-indications for the use of saline solutions.

7. In all urgent cases the intravenous method is preferable.

8. Greater care should be exercised to see that all water used intravenously is not only sterile but also non-toxic.

9. In medical practice artificial serums should be more frequently employed: (1) isotonic or hypotonic (*a*) after severe hemorrhage, exhaustive vomiting, or diarrhea; or (*b*) in cases of extreme inanition; (2) hypertonic (*c*) in toxemic cases, including eclampsia and uremia; (*d*) in cases of oliguria with threatened uremia; (*e*) to combat acidosis, or (*f*) in toxic states, as after anesthetics, gas, morphin poisoning, etc.

10. Dr. Fischer's theory of nephritis is a gratuitous hypothesis and his recommendations as to treatment are not justified either by established physiologic facts or by clinical experience.

5431 Fifth Avenue.

12. Beddard: In Leonard Hill's Recent Advances in Physiology and Biochemistry, New York, Longmans, Green & Co., 1908.

13. Fleig: Serums artificiels et médicament, etc., Gaz. d. hôp., 1912, p. 317; Bull. gen. d. therap., 1912, clviii, 575.

ABSTRACT OF DISCUSSION

Dr. John F. Anderson, Washington, D. C.: It is advisable to have distilled water. Is there any difference in the use of freshly distilled water or water that has been distilled for some time?

Dr. Ray L. Wilbur, San Francisco: My experience is similar to Dr. Litchfield's with regard to these solutions. Some of the same precautions concerning the use of serums apply to all forms of intravenous solutions. The recommendation we have had from Dr. Litchfield should not mislead physicians to use it too freely.

Dr. John A. Lichty, Pittsburgh: It is through Dr. Litchfield's work that I took up the substitution of glucose for normal salt solution. I think his paper is timely in calling attention to the routine use of normal salt in surgical clinics. I have for a long time noticed the appearance of acetone and diacetic acid in the urine in cases in which, for certain reasons, we starved the patient, as in gastric ulcer. Formerly I used rectal feeding but since knowing of the use of glucose I substitute this for other food by rectum. It is a question whether any good is being done by rectal feeding: I cannot answer this question except by experience. Since using glucose solutions in gastric ulcer I see less of the symptoms of acidosis in these cases, which I think is a strong recommendation of Dr. Litchfield's conclusions. I have had an experience which showed me this was the proper procedure: I saw, eight years ago, a case of hyperthyroidism. This patient apparently recovered and I did not see her again until one month ago when the symptoms were more marked—elimination of 6 ounces of sugar a day. I reduced the carbohydrates thinking thereby to control the sugar output. When I saw the patient later the sugar was 1 ounce a day and she was better and said she would rather go without the carbohydrates. Within twenty-four hours I was called and the patient had symptoms of diabetic coma. I felt responsible for the condition and gave her glucose to drink and per rectum. The pulse was 170; patient was delirious, and in an alarming condition. In thirty-six hours the symptoms changed, she was recovering from the attack, the pulse was 96 and she was feeling well. This is really the only case of diabetic coma in which I have ever seen recovery.

Dr. Lawrence Litchfield, Pittsburgh: We have tried to get the cleanest and purest water we could. Several years ago many of my patients, at my suggestion, put little stills in their houses, and the effect of distilling dirty river-water was sometimes quite astonishing. By passing the water through a Pasteur filter before distilling it, the product was

of course greatly improved. The Pasteur filter, distillation and subsequent boiling will not necessarily remove all noxious substances from the water. Our custom is to get as pure a water as is possible and distill and redistill thoroughly before using. The giving of dextrose solutions intravenously is very simple.

THERAPY OF CARDIOVASCULAR DISTURBANCES *

L. H. NEWBURGH, M.D.
Assistant Visiting Physician, Massachusetts General Hospital
BOSTON

The object of this investigation has been twofold: (1) to determine whether the poison of infectious diseases injures the vasomotor mechanism, and (2) to determine whether strychnin and caffein, both of which are commonly used to stimulate the cardiovascular apparatus, do actually have such an effect.

BLOOD-PRESSURE IN PNEUMONIA

Since 1899 clinicians[1] have believed that many of the grave symptoms and a large number of the deaths in pneumonia and other infectious diseases are directly due to failure of the vasomotor mechanism.

If it be true that grave symptoms and death in pneumonia are due to failure of the vasomotor apparatus, then it ought to be possible to divide pneumonics into two groups: (1) a group in which the vasomotor apparatus is intact, and (2) a group in which the vasomotor apparatus is seriously injured. In the first group blood-pressure measurements ought to form a curve which does not diverge widely from that for normal persons. In the second group the blood-pressure curve ought to be low in proportion to the gravity of the symptoms, and it should be very low indeed as death approaches. The blood-pressure curve ought to be the most reliable single measure of the state of the circulation in pneumonia, and a definite and exact indicator for our therapeutic efforts.

Weigert,[2] in 1911, studied the blood-pressure in a variety of infectious diseases, including pneumonia, and reviewed the work of earlier observers. His general conclusion is that one can establish no rule for the blood-pressure curve in pneumonia, and that consequently blood-pressure readings in pneumonia are of no prognostic value.

In contrast to this view is the statement of G. A. Gibson:[3]

> A pressure appreciably below the normal in pneumonia is invariably of evil omen and any considerable fall bodes disaster. When the arterial pressure, expressed in mm. Hg does not fall below the pulse-rate, expressed in beats per minute, the fact may be taken as of excellent augury, while the converse is equally true.

Newburgh and Minot have studied the blood-pressure in forty-five cases of pneumonia (1) with regard to the course of the systolic pressure in the fatal cases (nineteen cases) as compared with that of the persons who recovered, and (2) with regard to the working of Gibson's rule in these cases.[4]

The following conclusions have been reached:

1. The systolic pressure in the fatal cases tends to be higher than it is in the recoveries.
2. Low systolic pressures are not invariably of evil omen.
3. The rate of the pulse, and not the level of the pressure, is the chief factor in determining whether the pressure will fall above or below the pulse.
4. Prognostic inferences based on the relation of the level of the systolic pressure curve to the pulse curve (Gibson's rule) are wrong oftener than they are right in this series.
5. The course of the blood-pressure does not suggest that there is a failure of the vasomotor mechanism in pneumonia.

STATE OF THE VASOMOTOR MECHANISM IN PNEUMONIA

Romberg[5] and his associates gave lethal doses of pneumococci to rabbits. They then selected animals in various stages of the disease and recorded the effect on carotid blood-pressure of stimulation of the nasal and anal mucous membranes.

In normal animals and those only moderately sick, peripheral stimulation caused a very large rise in blood-pressure. In very sick animals the rise was much smaller, while in animals near death the strongest faradic currents applied to the mucous membranes caused no blood-pressure response. Since the myocardium was still intact, as alleged on the basis of other experiments by these authors, the failure of the blood-pressure to rise as the result of peripheral stimulation proved that the vasomotor center was paralyzed.

Porter and Pratt[6] have given rabbits lethal doses of diphtheria toxin. The vasomotor reflexes were then studied in all stages of the disease. The fall in general blood-pressure following stimulation of the depressor nerve and the rise in blood-pressure following stimulation of the sciatic nerve were measured. A normal response was obtained.

Porter and Newburgh have produced pneumonia in rabbits, cats and dogs.[6] When the animals were within a few hours of death, the vasomotor reflexes produced by stimulation of the depressor and sciatic nerves were examined. Even in animals about to die a normal response was obtained.

We conclude that it cannot be demonstrated that the poison of pneumonia impairs the function of the vasomotor mechanism.

STRYCHNIN

A. Broken Cardiac Compensation

The cases were studied in accordance with the following plan: The patients on entrance to the ward were placed on a diet of liquids and soft solids, and the liquids were limited to 1,000 c.c. in the twenty-four hours. If there was either sufficient dyspnea or cough to prevent sleep, morphin or codein was ordered. The

---

* Read before the Section on Pharmacology and Therapeutics at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* Aided by a grant from the Council on Pharmacy and Chemistry of the American Medical Association.

1. Romberg, Passler, Bruhns and Müller: Experimentelle Untersuchungen über die allgemeine Pathologie der Kreislaufstorung der acuten Infectionskrankheiten, Arch. f. klin. Med., 1899, lxiv, 1652. Passler and Rolly: Experimentelle Untersuchungen über Kreislaufstörungen bei acuten Infectionskrankheiten, Deutsch. Arch. f. klin. Med., 1903, lxxvii, 96.
2. Weigert, K.: Ueber das Verhalten des arteriellen Blutdrucks bei den acuten Infectionskrankheiten, Samml. klin. Vortr. (Volkmann's), 1911, p. 459, Inn. Med., p. 138.
3. Gibson, G. A.: Some Lessons from the Study of the Arterial Pressure, Edinburgh Med. Jour., 1908, new series, xxiii, 17.
4. For a detailed report of this work see Newburgh and Minot: Blood-Pressure in Pneumonia, Arch. Int. Med., 1914.
5. Porter and Pratt: The State of the Vasomotor Center in Diphtheria Intoxication, Am. Jour. Physiol., 1914, xxxiii, 431.
6. For a detailed report of this work see Porter and Newburgh: The State of the Vasomotor Mechanism in Pneumonia, Am. Jour. Physiol., 1914, xxxiii, and Newburgh: Arch. Int. Med., 1914, shortly to be published.

bowels were moved with various cathartics. The weight was noted. Temperature, pulse and respirations were recorded twice daily. The twenty-four-hour fluid intake and urinary output were noted. The patients were kept in bed throughout the period of observation. For the first few days after entrance the clinical course of the affection was watched. As the result of this regimen many patients will entirely recover their compensation without the aid of digitalis. It is important to exclude all such cases from a series in which the effect of any given drug on the heart is being studied.

Only those patients who showed no persistent slowing of the cardiac or respiratory rates, no increased output of urine, and no loss of weight after three or four days were considered unimproved. Failure to observe this precaution may cause an error of as much as 50 per cent. The latter group was then given strychnin, and the effect, if any, on the pulse, respiration, urinary output, systolic and diastolic pressures, weight and subjective symptoms, noted.

Finally, a third period followed in which digitalis bodies and diuretics were given in order that the effect of strychnin might be compared in the same patient under otherwise uniform conditions, with the effect of remedies whose efficacy is established beyond doubt.

Eight cases of broken compensation were studied. The smallest single dose of strychnin was $\frac{1}{30}$ grain, the largest $\frac{1}{10}$ grain. No improvement occurred in any of the eight patients who were given the strychnin. Four of them subsequently recovered their compensation, following the administration of digitalis and diuretics.

Conclusions: It cannot be demonstrated that strychnin, even when given to the point of toxicity, has any beneficial effect on broken cardiac compensation.

B. Infectious Disease and Hypotensive Cases

In this group, the effect of single doses of varying size or of a number of doses given within a short period of time on the systolic, diastolic and pulse-pressure, on the rate and character of the pulse, on the respiratory rate and on the general condition was studied.

When judging the effect of any therapeutic procedure on the blood-pressure, one must thoroughly realize that moderate and even very large variations result from slight external stimuli of all sorts. For example: Zabel,[7] who investigated the causes for sudden changes in pressure, found that a superficial pinprick caused a systolic rise of 72 mm. in one individual, and that the average rise following this stimulus lay between 11 and 30 mm.

Our readings were made under conditions far from ideal. The patients were nearly all exposed to the noise and bustle and changing temperature of an open ward. They were all sick, some of them desperately so, some of them had painful diseases, others were receiving subcutaneous medication every hour. Under such conditions, variations of 10, 15 or even 20 mm. are to be expected as the result of unavoidable external stimuli, and, unless very consistent, cannot be held up as evidence that the drug is increasing the activity of the vasomotor center or that any other effect peculiar to the drug has been produced. The same reasoning applies to the rate of the heart-beat.

The data were obtained from seven cases of lobar pneumonia, varying in type from mild to fatal, two mild and one severe typhoid, one fatal tuberculous enteritis, one severe general peritonitis, one fatal infectious colitis, one delirium tremens and one traumatic shock.

In a patient suffering from tuberculous enteritis, who showed a persistently low systolic pressure for several weeks — from 80 to 95 — and who was emaciated and very weak, the failure of $\frac{1}{10}$ grain of strychnin to affect the pressure was considered highly significant. A frail, small woman suffering from a fracture of the thigh, received $\frac{1}{10}$ grain of strychnin every hour for six hours and after an interval of seven hours three more doses at the rate of $\frac{1}{10}$ grain per hour, without showing either toxic symptoms or any blood-pressure change. In a case of typical surgical shock induced by fracture of the skull, the initial systolic pressure, which was from 55 to 65 mm., was unaffected by either $\frac{1}{10}$ grain of strychnin or 5 grains of caffein sodio-salicylate; but nevertheless the failure of these drugs to show a pressor effect cannot be explained by assuming that the function of the vasomotor center was in abeyance, for stimulation of the peripheral nerves was followed by a prompt and lasting rise in the pressure of 30 mm. The stimulus consisted of the application to the wound of tincture of iodin.

The results obtained from the use of strychnin in this group of patients may be summed up as follows:

1. Eight times out of seventeen there was no change in systolic pressure. Once it fell 10 mm. for two hours. Nine times out of seventeen there was a rise in systolic pressure. This rise was small, usually brief, often of only a few minutes' duration. It was inconstant, never to be relied on — often occurring after the first injection of a series, then falling to the original level in a short time and not recurring after subsequent injections. In no instance was the rise accompanied by improvement in the clinical condition. Only once was there a rise of more than 15 mm. In this single instance the pressure rose 26 mm. for a few minutes. In one patient the examination of the lungs caused a rise of from 20 to 30 mm. which lasted one hour; and in another patient, subcutaneous injection of water caused a greater rise than $\frac{1}{10}$ grain of strychnin.

2. Nine times out of thirteen there was no effect on the diastolic pressure. Once it fell 10 mm. for forty minutes, and in another case 15 mm. for one and one-half hours. Once it rose 30 mm. for fifteen minutes.

3. Eleven times out of sixteen the pulse showed no change. In no case was there a slowing which could be honestly attributed to the drug.

CAFFEIN

It is a very common clinical practice to give caffein, for the purpose of stimulating the vasomotor center, to persons suffering from acute infectious diseases. It has, however, been shown by Sollmann and Pilcher[8] that caffein has a very insignificant stimulating effect on the vasomotor center. They summarize their very careful and complete studies thus:

The circulatory effects of moderate doses of caffein consist in vasodilatation combined with sufficient cardiac stimulation to maintain or even increase blood-pressure. Both of these

7. Zabel: Plötzliche Blutdruckschwankungen und ihre Ursachen, München. med. Wchnschr., 1910, lvii, 2278.

8. Sollmann and Pilcher: The Actions of Caffeine on the Mammalian Circulation, Jour. Pharmacol. and Exper. Therap., 1911-1912, iii, 19.

activities favor blood-flow. The oncometer shows conclusively that the moderate rise of pressure which is observed in anesthetized animals is, in most cases, exclusively cardiac.

The method adopted for studying the effects of caffein was the same as that used for studying the effects of strychnin in the acute infectious and hypotensive cases. Caffein sodio-salicylate was invariably employed.

Data: There were three cases of severe pneumonia, one of general peritonitis, one of fatal tuberculous enteritis, two of traumatic shock and one fatal septicopyemia.

Results: 1. Eight out of nine times there was no effect on the systolic pressure. Once it fell 35 mm. during the period of treatment. There was not a single rise in systolic pressure as a result of administering caffein.

2. Five out of six times there was no effect on the diastolic pressure. Once it fell 10 mm. during the period of treatment.

3. Nine out of ten times there was no effect on the rate of the pulse. Once it rose 10 beats per minute during the period of administration.

4. In no instance was there a measurable change in respiration.

It could not be demonstrated, with the method used, that either strychnin sulphate or caffein sodio-salicylate has any beneficial effect on the cardiovascular disturbances of the infectious diseases.

SUMMARY

1. Since the blood-pressure is not low either in persons showing grave symptoms of pneumonia or in those dying of that disease, and since it has been proved that the vasomotor arcs are normal in animals near death from pneumonia, it is logical to conclude that the vasomotor mechanism is not impaired in pneumonia.

2. Strychnin does not improve or augment the work of the heart in persons suffering from broken cardiac compensation.

3. It could not be shown that either strychnin or caffein stimulated the cardiovascular apparatus in any of the conditions studied.

329 Beacon Street.

ABSTRACT OF DISCUSSION

DR. LAWRENCE LITCHFIELD, Pittsburgh: Dr. Newburgh gave the impression that blood-pressure increases in pneumonia and that many patients die therefrom. I think the blood-pressure varies in pneumonia as it does in persons without pneumonia and, therefore, this should be taken into account. So far as my observation goes, most of the pneumonia patients that I lose are either those who have a low blood-pressure or those in whom the pressure falls in spite of treatment. I do not think that pneumonia in the beginning affects the blood-pressure specifically. Pressure varies in pneumonia as it does in health and there are very wide variations in healthy people.

DR. BERNARD FANTUS, Chicago: The critical study of the action of drugs on diseased human beings is something that we are very much in need of; and Dr. Newburgh's paper is an excellent example of the kind of work of which we should have a large amount. On the other hand, using drugs in a routine manner does not enable us to formulate any judgment concerning the value or lack of value of that particular form of treatment. As far as my own observations are concerned I must take issue with the statement made by the previous speaker that strychnin is of value in pneumonia. I had occasion to make some observations on the death-rate of pneumonia patients some years ago, in services at the Cook County Hospital in Chicago, in which strychnin was used and in other services in which it was not used, and my impressions were such as would confirm the belief that the patients had a better chance for life in the services in which strychnin was not used in a routine manner.

DR. L. P. HAMBURGER, Baltimore: What is the history of the clinical use of strychnin in this country? In Germany it is not viewed at the "life-preserver" which we here deem it!

DR. C. S. WILLIAMSON, Chicago: One important point is that the variations in the systolic blood-pressure alone are by no means a reliable criterion of improvement, or the reverse. Sahli, some years ago, made a study of cases associated with high blood-pressure, and concluded that the blood-pressure was kept up by the cyanosis and venous congestion of the medullary centers, a condition to which he gave the name *Hochdruck-Stauung*—high pressure stasis. Now every clinician of much experience sees these cases occasionally. The blood-pressure is very high, despite outspoken signs of broken compensation, and after the use of some of the digitalis bodies intravenously or otherwise, the systolic pressure drops as much as 20 or 25 mm., with a simultaneous great improvement in the condition. One must therefore bear in mind this group of cases, or othrwise run a great risk of misinterpreting the results. Might not the high pressure in some of Dr. Newburgh's cases be due to medullary stasis, as in the cardiac group just referred to?

DR. L. H. NEWBURGH, Boston: It is a fact that we find high blood-pressure in cases of pneumonia. Because a drug does not raise or does not affect the pressure does not permit us to decide whether or not it is a good drug. Caffein probably is a good drug, as has been shown, but its effect is not primarily on the blood-pressure, though it does augment the circulation without increasing the blood-pressure appreciably. Incidentally it has no effect on the pulse. I merely stated that there was no measurable effect.

A COMPARISON OF CHOLESTERINIZED AND NON-CHOLESTERINIZED ARTIFICIAL ANTIGENS IN THE WASSERMANN REACTION *

CHARLES C. W. JUDD, A.B., M.D.
BALTIMORE

Since the introduction of cholesterinized antigen by Sachs[1] from Ehrlich's laboratory, reports concerning its specificity have been conflicting, varying from the assertion that an artificial antigen had been found possessing the requirements of an ideal "standard antigen,"[2] to an assertion that it was unreliable and hence a menace to the clinician.[3]

In view of such diversity of opinion, it appeared desirable to investigate its merits in our own hands before relying on it, and to report the result of that investigation extending over a series of four hundred reactions. In these cases, as accurate knowledge of the clinical condition of the patient was obtained as a mixture of hospital and dispensary practice and referred cases would permit. Inadequacy of clinical records and personal histories have alone been influential in excluding about two hundred more reactions in a straight series of approximately six hundred cases. Study of the clinical data led me to adopt the five divisions of clinical diagnosis with reference to syphilis as follows: (1) positive, (2) probable, (3) for diagnosis (this division [six reactions] was omitted in

* From the Department of Clinical Pathology and Experimental Medicine of the College of Physicians and Surgeons, Baltimore.

1. Sachs, H.: Berl. klin. Wchnschr., 1911, lxviii, 2066.
2. McIntosh, J., and Fildes, P.: Syphilis, London, 1911, p. 220; Ztschr. f. Chemotherap., 1912, i, 79.
3. Thomas, B. A., and Ivy, I. H.: Use of Cholesterinized Antigens in the Wassermann Reaction, THE JOURNAL A. M. A., Jan. 31, 1913, p. 363.

a consideration of those cases in which there was a diversity of results with the antigens used), (4) doubtful, and (5) negative.

Approximately half of the reactions included in this study were performed at the laboratory of Dr. Charles E. Simon and the remainder by myself. The moderate discrepancy of parallelism between these two portions of the series is adequately explained on the ground that, in one instance, tests are made on all the male public patients of the Mercy Hospital by one of us as routine, while at least a suspicion of lues is entertained when specimens are referred to the other.

The comparison in the reactions of this series was confined to the analysis of the same serum or spinal fluid tested in duplicate with two antigens, one, the acetone-insoluble lipoid extract of beef-heart of Noguchi (designated in the accompanying tables as N. A.), and the other, cholesterinized alcoholic extract of beef-heart prepared after the method of Sachs (designated as S. C. A.). Repeated titration of antigenic and complementary power of these two antigens during the course of the series gave a constant titer of one in ten parts of 0.9 per cent. salt solution. They hence exhibited complete parallelism and splendid keeping power.

TABLE 1.—CASES IN WHICH BLOOD-SERUM RESULTS WERE IDENTICAL WITH THE TWO ANTIGENS

Reaction *	Total No. of Cases	Clinically and Historically					Positive Cases Include
		Positive	Probable	For Diagnosis	Doubtful	Negative	
+++	95	73	13	7	2	0	One case of tabes and 3 of general paresis.
++	21	18	0	2	0	1	Two of long-standing lues with active treatment; 1 of general paresis.
+	10	6	1	3	0	0	One of long-standing lues with active treatment; 1 general paresis.
∓	6	1	0	1	0	4	One of long-standing lues with active treatment; 1 general paresis.
±	22	3	2†	5	4	8	Three of long-standing lues with active treatment.
—	115	22‡	0	24	22	47	Eight of general paresis; 21 of long-standing lues with active treatment, and 1 of cerebrospinal lues.
Total	269	123‡	16	42	28	60	

* In this and the following tables +++ and ++ indicate, respectively, strongly positive and positive; + and ∓ inconclusive, and ± and —, negative.

† One case in the primary stage and one also of congenital lues.

‡ Included in the 32 doubtful and negative reactions were long-standing with active treatment, 26; cerebrospinal lues, 1; general paresis, 10, 9 of which were of long standing with active treatment.

The antigen of Noguchi was selected for the comparison, not only because it was one which we had previously been using, but also because it is considered the most efficient[4] of uncholesterinized artificial luetic antigens.

This series includes 379 serums and 21 spinal fluids. The tests on the latter were usually made in more than one dilution, each dilution being made in duplicate with either antigen. Two hundred and sixty-nine serums, or 71 per cent., and 14 spinal fluids, or 66 per cent. of the total number of each, gave reactions which were identical with both antigens; 105 serums and 7 spinal fluids (27.7 per cent. and 33 per cent., respectively), gave in varying degree a more marked deviation of complement with standard cholesterinized antigen than with Noguchi antigen. But 5 serums (1.25 per cent.) and no spinal fluids gave more complete fixation of complement with Noguchi antigen than with standard cholesterinized antigen.

4. Kolmer, J. A.; Lanbaugh, E. E.; Casselman, A. J., and Williams, W. W.: Practical Studies on the So-Called Syphilis "Antigens," with Special Reference to Cholesterinized Extracts, Arch. Int. Med., December, 1913, p. 660.

CASES IN WHICH RESULTS WERE IDENTICAL

1. As shown in Table 1 there were 116 positive reactions. Of these, 2 were clinically doubtful and 1 clinically negative. These three were all in negroes, and though not showing signs of syphilis, one cannot escape the lingering suspicion that their faulty observation, not to question their veracity, might account for the discrepancy in past history. The remaining 113 positive reactions were not at variance with the clinical findings or histories.

2. There were 16 inconclusive reactions. Of these, 4 were negative, the same number for diagnosis, 1 was probably luetic and 7 were definitely so. Of the last, 2 were general paretics and 2 were active cases, all 4 undergoing vigorous antiluetic treatment, leaving 3 positive cases which were not detected by either antigen.

3. There were 137 negative reactions. Of this number, 25 had positive histories, 24 of which had been under long-continued antiluetic treatment. The remaining case was diagnosed as brain syphilis (Case 1, Table 2 and Case 1, Table 4) the cerebrospinal fluid giving complete complement fixation with both antigens.

In this group there were two cases in which lues was clinically probable. One was tentatively diagnosed as congenital syphilis—parenthetically, congenital lues is the evil genius of the Wassermann reaction—and the other a chancre. In the latter case the appearance of a secondary rash four weeks later substantiated the clinical diagnosis, at which time a second blood Wassermann gave a +++ reaction with both antigens.

Twenty-nine out of a total of 42 cases which were clinically for diagnosis yielded a negative reaction, and 26 out of 28 cases which were clinically doubtful were likewise negative.

4. A separate consideration of the so-called parasyphilitic diseases is of interest. This includes 14 general paretics. All except 4 had had vigorous treatment, including in most cases intraspinal injections of salvarsanized blood-serum. Of the 4 untreated cases, 1 gave a negative and 1 an inconclusive reaction, while 2 were strongly positive. Of the 10 treated cases, 1 persisted with complete complement fixation, the remaining 9 being modified to a greater or less extent by treatment (or otherwise). One case of tabes dorsalis yielded complete complement fixation.

Fourteen spinal fluids were examined in which identical results were obtained with both antigens (Table 2).

Six of these were clinically positive cases and gave complete complement fixation in all dilutions. One was tentatively diagnosed as brain syphilis and gave a ++ reaction in the stronger dilutions only. The remaining seven cases were Wassermann-negative even in the strong concentrations. The clinical diagnoses in these cases were as follows: multiple sclerosis, 1 case; sciatica, 1; neurasthenia, 2 (one of which had active lues and a positive blood-serum Wassermann); chorea, 1 (congenital lues was considered but not

established); paralysis of third right nerve, 1; for diagnosis, 1 case.

CASES IN WHICH RESULTS WERE NOT IDENTICAL

Most important, of course, are the 110 serums (29 per cent.) and the 7 spinal fluids (33.33 per cent.), in which there was not agreement in the results obtained with the two antigens. For purposes of accuracy in clinical control it seemed advisable to disregard in this connection six additional cases which would, if not omitted, be listed "for diagnosis."

We considered these cases with reference to the degree of complement fixation exhibited by the more inhibitive antigen irrespective of the reaction of the weaker one. On this basis the same interpretation applies to the results here obtained as when the reactions were identical, namely, + + and + + + being considered positive, + and ∓ as inconclusive, and ± as negative (obviously with our method of indicating complement fixation there could be no disagreement of results for degrees of inhibition less than ±).

Those cases in which the blood-serums yielded a greater degree of complement fixation with standard cholesterinized antigen than with Noguchi antigen are recorded in Table 3. This division yielded 68 (64.7 per cent.) positive Wassermann reactions, 29 (27.6 per cent.) inconclusive Wassermann reactions and but 8 (7.7 per cent.) negative reactions.

Of the 68 patients with positive reactions, all save 4 of the persons were or had been definitely infected with syphilis. Of the 4 who denied such infection, 3 admitted a history of chancroid, which is certainly suggestive of the possibility of a specific lesion, thus leaving only 1 case to be explained either on the ground of a non-specific reaction or false history. Which of these alternatives is correct remains an open question.

Of the 29 patients with inconclusive reactions, 9 gave no evidence whatsoever of lues. Seven were doubtful, considered clinically (1 gave a history of chancroid), 1 was a congenital luetic and the remaining 12 were undoubted cases of lues under the influence of vigorous treatment.

Of the 8 cases yielding negative reactions, 3 were clinically negative, 3 were doubtful and in 2 the reactions had changed from positive to negative in the course of vigorous antiluetic therapy.

Those cases in which the cerebrospinal fluids yielded a greater degree of complement fixation with standard cholesterinized antigen than with Noguchi antigen are recorded in Table 4. All of these cases were undoubtedly luetic. Before treatment two of them (Cases 1 and 4) had shown the same degree of inhibition with the two antigens (compare Cases 1 and 4 of Table 2). Two others were before and after treatment in the same persons. These two exhibit one of the most

TABLE 2.—CASES IN WHICH CEREBROSPINAL FLUIDS YIELDED RESULTS IDENTICAL WITH THE TWO ANTIGENS

Case No.	Diagnosis	N. A.*							S. C. A.*						
		1-1	1-2	2-5	1-3	1-5	1-8	1-10	1-1	1-2	2-5	1-3	1-5	1-8	1-10
1	Brain syphilis	+ + +	..	+ + +	..	..	..	..	+ + +	..	+ + +	..	..	..	..
2	General paresis	..	..	+ + +	..	..	..	..	—	..	+ +	..	..	..	..
3	Multiple sclerosis	..	..	—	..	..	..	..	—	..	—	..	..	..	..
4	Tabes	+ + +	..	+ + +	..	..	..	..	+ + +	..	+ + +	..	..	..	..
5	Brain syphilis	..	..	..	..	+ + +	..	..	..	..	..	..	+ + +	..	..
6	Tabes	..	..	..	..	+ +	..	..	..	..	..	..	+ +	..	..
7	Tabes	..	..	..	..	+ +	..	..	..	..	..	..	+ +	..	..
8	Brain syphilis ?	..	+ +	..	+ +	—	—	—	..	+ +	..	+ +	—	—	—
9	For diagnosis	..	..	..	..	±	..	..	..	..	..	..	±	..	..
10	Sciatica	..	±	..	—	—	—	—	..	—	..	—	—	—	—
11	Neurasthenia	..	—	..	—	—	—	—	..	—	..	—	—	—	—
12	Lues; neurasthenia ?	..	—	..	—	—	—	—	..	—	..	—	—	—	—
13	Chorea; congenital lues	..	—	..	—	—	—	—	..	—	..	—	—	—	—
14	Third nerve paralysis	..	..	..	—	—	..	..	..	..	..	—	—	..	..

* The figures heading the columns below (1-1, 1-2, 2-5, etc.) indicate dilutions. Thus 1-1 indicates undiluted spinal fluid; 1-2, 1 part spinal fluid and 1 part 0.9 per cent. saline; 2-5, 2 parts spinal fluid and 5 parts saline; 1-3, 1 part spinal fluid and 3 parts saline; 1-5, 1 part spinal fluid and 5 parts saline; 1-8, 1 part spinal fluid and 8 parts saline; 1-10, 1 part spinal fluid and 10 parts saline, of each of which 0.5 c.c. was used.

TABLE 3.—CASES IN WHICH BLOOD-SERUM COMPLEMENT FIXATION WAS GREATER WITH CHOLESTERINIZED THAN WITH NOGUCHI ANTIGEN

Reaction		Total No. of Cases	Clinically and Historically				Positive Cases Include
N. A.	S. C. A.		Probable	Doubtful	Negative	Positive	
+ +	+ + +	16	2	0	0	14	
+	+ + +	8	3	0	0	5	One case of general paresis; 1 of long standing with active treatment.
∓	+ + +	2	0	0	0	2	
±	+ + +	5	2	1*	0	2	One case of general paresis; 1 gave a + + + N. A. reaction before treatment.
—	+ + +	19	3	1*	0	15	One gave a + + + N. A. reaction before treatment; 1 gave a + luetin reaction; 2 of long standing with active treatment; 5 general paresis and 1 of tabes.
+	+ +	5	1	0	1	3	One gave a + + + N. A. reaction before treatment.
±	+ +	0	0	0	0	0	
±	+ +	7	1	1*	0	5	One gave a + + + N. A. reaction before treatment; 3 of long standing with active treatment; 1 persistent — N.A. for one year.
—	+ +	6	2	0	0	4	One of general paresis; 1 of long standing with active treatment.
∓	+	1	0	0	1	0	
±	+	6	0	0	2	4	Four of long standing with active treatment; 1 of general paresis.
—	+	4	1‡	2	0	1	One of long standing with active treatment.
±	∓	5	0	1	2	2	Two gave a + + + N. A. reaction before treatment.
—	∓	13	0	4*	4	5	Two gave a + + + N. A. reaction before treatment; 5 of long standing with active treatment; 1 with brain syphilis.
—	±	8	0	3	3	2	Two of long standing with active treatment.
		105	15	13	13	64†	

* One case with history of chancroid.

† Totals: a + + + N. A. reaction before treatment, 8; a + luetin reaction, 1; history of "chancroid," 4; long standing with active treatment, 19; congenital lues, 1; persistent — N. A. for one year, 1; general paresis, 8; tabes, 1; brain syphilis, 1.

‡ One case congenital lues.

notable features of the entire series, namely, the more resistant nature of standard cholesterinized antigen complement fixation during the course of treatment. After the collection of data for this paper was concluded, it is interesting in this connection to note that a third test in this same case gave negative results in all dilutions with both antigens, indicating that the reaction with standard cholesterinized antigen is amenable to complete change, provided that treatment is sufficiently extensive and intensive.

There remain for consideration only those cases in which Noguchi antigen gave a greater degree of complement fixation than standard cholesterinized antigen. There were but five such cases (1.25 per cent. of the entire series) all occurring in blood-serums (see Table 5). One case probably luetic gave a positive reaction with Noguchi antigen and an inconclusive one with standard cholesterinized antigen. Three of the remaining four cases were definitely non-luetic or doubtfully so. The last case was definitely luetic, but, under vigorous treatment, the reaction was becoming negative.

TABLE 4.—CASES IN WHICH THE CEREBROSPINAL FLUID WAS MORE STRONGLY POSITIVE WITH CHOLESTERINIZED ANTIGEN THAN WITH NOGUCHI ANTIGEN

Case No.	Diagnosis	N. A.							S. C. A.						
		1-1	1-2	2-5	1-3	1-5	1-8	1-10	1-1	1-2	2-5	1-3	1-5	1-8	1-10
1	Brain syphilis	—	..	—	..	..	..	..	+++	..	+++	..	..	..	..
2	Tabes	..	+	..	+	—	—	—	..	+++	..	+++	—	—	—
3	Tabes	..	±	..	±	±	..	±	..	+	..	+	±	±	±
4	Tabes	..	±	..	—	—	—	—	..	+++	..	±	±	±	±
5	Brain syphilis	..	..	..	..	—	..	..	..	..	..	..	+++	..	..
6	Tabes	..	+++	..	+++	+++	±	±	..	+	..	+++	+++	+++	+++
7	Brain syphilis	..	..	..	..	+	..	..	..	..	..	..	+++	..	..

See explanation under Table 2.

TABLE 5.—CASES IN WHICH BLOOD-SERUM COMPLEMENT FIXATION WAS GREATER WITH NOGUCHI THAN WITH CHOLESTERINIZED ANTIGEN

Reaction		Total No.	Clinically and Historically			
N. A.	S.C.A.		Positive	Probable	Doubtful	Negative
+++	+	1	..	1	..	..
±	—	4	1*	..	1	2
Total	.....	5	1	1	1	2

Under active treatment.

SUMMARY

1. In a series of 379 serums and 21 spinal fluids, 269, or 71 per cent., of serums and 14, or 66.66 per cent., of spinal fluids gave identical results with standard cholesterinized antigen and Noguchi antigen.

2. In 110, or 29.05 per cent., of serums and 7, or 33.33 per cent., of spinal fluids, there was to a greater or less extent a lack of agreement between these two antigens. Of the 110 serums showing differences in complement fixation, 105, or 95.4 per cent., showed greater complement fixation with standard cholesterinized antigen than with Noguchi antigen, while 5, or 4.6 per cent., showed greater inhibition of hemolysis with Noguchi antigen than with standard cholesterinized antigen. No spinal fluid exhibited the latter phenomenon.

CONCLUSIONS

1. Standard cholesterinized antigen does not yield an appreciable number of non-specific reactions.

2. Standard cholesterinized antigen detects many luetic cases which do not yield positive results with Noguchi antigen.

3. Standard cholesterinized antigen, though amenable to the influence of treatment, is less susceptible to extinction by therapeutic measures.

4. Standard cholesterinized antigen possesses splendid keeping properties, is always available and is easy of preparation.

5. Standard cholesterinized antigen is an ideal artificial antigen.

Plymouth Hall.

THE ADRENALS AND THE PULSE-RATE

R. G. HOSKINS, Ph.D.
Associate Professor of Physiology, Northwestern University Medical School
AND
C. R. LOVELLETTE
CHICAGO

The adrenal glands seem to be an important factor in integrating the body for unusual muscular activity. Circulating epinephrin causes a depression of the digestive activities, a shifting of the blood from the splanchnic to the somatic structures, increased blood-pressure, dilated bronchioles and mobilization of dextrose. It is an efficient aid in abolishing fatigue.[1]

During muscular exertion acceleration of the pulse occurs. It would seem that the acceleration might be due in part to a discharge of epinephrin, which is a well-known cardiac stimulant. But the general supposition is that in a normal animal the drug causes slowing of the heart, the depression being a reflex effect resulting from high blood-pressure. Such is the common text-book statement of the case. On this ground, Gasser and Meek[2] have recently concluded that epinephrin discharge is not to be considered a factor in the accelerated pulse which accompanies muscular exercise. On the face of the matter this would seem an anomaly. Why should adrenal secretion cause a number of other effects which favor muscular activity but oppose the acceleration of the pulse, which, as a matter of fact, occurs despite any such opposition?

The statement that epinephrin slows the pulse seems to be based on Oliver and Schaefer's[3] and Szymonowicz's[4] original reports on the effects of injecting adrenal extracts. Their observation, that the sudden injection of massive doses slows the pulse, has often been confirmed. But it is to be noted that such experi-

1. For a review of the literature see Cannon: Am. Jour. Physiol., 1914, xxxiii, 357.
2. Gasser and Meek: Am. Jour. Physiol., 1914, xxxiv, 69.
3. Oliver and Schaefer: Jour. Physiol., 1895, xviii, 230.
4. Szymonowicz: Arch. f. d. ges. Physiol., 1896, lxvi, 131.

ments fail in two respects to simulate actual adrenal secretion. Normal adrenal discharge cannot be supposed to occur with the rapidity of an ordinary intravenous injection. Moreover, the quantities used in pharmacologic demonstrations are usually far out of proportion to any that the glands themselves can be supposed to secrete. While conclusive data have not been obtained, the available evidence indicates that the potential discharge of epinephrin is comparatively small. Hoskins and McPeek[5] observed that in dogs in which particular care was taken to conserve the available epinephrin, direct massage of the glands produced at most but a slight elevation of blood-pressure — approximately 25 per cent. above the normal.

Osgood[6] compared the effects of stimulating the secretory fibers to the adrenal glands with injecting epinephrin. He found that the quantity discharged was small and that the glands were soon exhausted.

Subcutaneous injections of epinephrin with consequent slow absorption have been observed to cause acceleration of the pulse. Oliver and Schaefer's original paper contains an illustrative protocol of a dog in which, after a large subcutaneous injection of adrenal extract, the pulse gradually increased for an hour and a half from 116 to 150 per minute.[7] Also with the use of epinephrin clinically as a test for *sympathicotonie* an accelerated pulse is often observed.[8]

Normal epinephrin discharge can be closely simulated by injecting the drug slowly into a femoral vein. We have investigated the effects of such injections on the pulse, using medium-sized dogs as the experimental animals. We employed quantities of the drug sufficient to cause all degrees of increased blood-pressure, in various cases from 9 to 77 per cent. The aim was to inject the fluid steadily so as to produce smooth curves, either gradually ascending or ascending and sustained at an increased height. The injections were continued over a period of from a half to two minutes. The doses were from 3 to 8 c.c. of epinephrin (adrenalin, P. D. & Co., 1:50,000 dilution). The dogs were held under ether anesthesia just sufficiently deep to abolish the corneal reflex. The heart-rate was determined by counting the pulse-waves in a femoral arterial pressure record on which a synchronous time record was registered from a Harvard "electric clock." The pulse was counted for ten or fifteen seconds before the injection began and at intervals while the animals were under the full influence of the drug. All the dogs under the influence of ether showed a somewhat high pulse-rate as compared with that of unanesthetized dogs. The results of the experiments are embodied in the accompanying table. In cases in which a single reading gives the essential result of the experiment, one only is given. In other cases in which different results were obtained during different stages of the reaction two readings have been selected to exemplify the results of the whole series of determinations of that particular experiment. In eighteen of the twenty-eight dogs studied acceleration alone resulted from the injection. In five instances decreased pulse-rate only was observed. In four instances the pulse was accelerated when blood-pressure was moderately increased, but slowed when the pressure went higher. In one case the pulse-rate was unchanged, although the blood-pressure was increased from 108 to 154 mm.

These determinations were made either during the period while the injection was continuing or within less than a half minute after it was discontinued. Doses of epinephrin of the size employed are destroyed very quickly. As soon as this destruction is accomplished, or well under way, the pulse begins to be retarded and is often below the initial rate before the original pressure equilibrium is restored. If the dose has been very large and quickly injected this secondary retardation becomes pronounced. It is probable that an undue attention to this effect has given rise to the general opinion that retardation is the characteristic effect of epinephrin injections.

THE INFLUENCE OF EPINEPHRIN ON PULSE FREQUENCY AND BLOOD-PRESSURE IN TWENTY-EIGHT DOGS

Animal No.	Pulse		Blood-Pressure	
	Before Epinephrin*	After Epinephrin*	Before Epinephrin†	After Epinephrin†
1	234	228	132	152
	234	192	132	162
2	174	198	108	154
	174	210	108	192
3	150	162	92	116
	150	204	92	124
4	200	168	108	134
5	204	252	82	114
6	188	180	98	140
	188	164	98	170
7	162	198	96	128
8	180	228	96	104
9	162	144	62	108
	156	162	68	82
10	204	224	114	154
	204	224	114	186
11	180	196	108	154
12	210	234	116	132
	198	234	114	140
13	160	152	98	112
	148	152	88	108
14	216	220	116	136
	216	208	116	162
15	156	204	94	130
16	258	258	108	154
17	240	246	114	140
18	186	210	82	112
19	210	240	100	140
20	156	138	112	150
21	174	210	108	190
22	162	252	82	160
23	184	228	110	120
24	234	282	92	176
	144	216	110	144
25	192	228	114	176
26	184	216	76	130
27	210	192	112	154
28	188	204	94	130
	188	164	94	142

Decreased pulse frequency, 11.
Increased pulse frequency, 28.
No effect, 1.
*Beats per minute.
†Mm. of mercury.

Even though a slowing of the pulse had been found, the anomaly previously referred to would be seeming rather than real. Under ordinary natural conditions any occurrence which causes accelerated pulse causes at the same time augmented blood-pressure. It is a fundamental law, however, that increased pressure in itself tends always to retard the pulse. In any case, therefore, in which acceleration of the pulse and augmentation of blood-pressure occur together, there has been a stimulation of the heart sufficient more than to compensate for the operation of this law. The accelerated pulse is probably due to the cumulative effect of several kinds of stimuli to the heart, as nerve impulses, venosity of the blood and circulating epinephrin. It would by no means follow, therefore, that even if epinephrin *alone* did slow the pulse, adrenal

5. Hoskins, R. G., and McPeek, Clayton: The Effects of Adrenal Massage on Blood-Pressure, THE JOURNAL A. M. A., June 7, 1913, p. 1777.
6. Osgood: Cited by Cannon: (Footnote 1.)
7. Oliver and Schaefer: Jour. Physiol., 1895, xviii, 236.
8. Sardeman, G.: Ztschr. f. exper. Pathol. u. Therap., 1913, xii, 504.

discharge is not a factor in the accelerated pulse which accompanies muscular activity. The accelerator influence is acting in any case.

SUMMARY AND CONCLUSION

Intravenous injections of epinephrin under conditions closely simulating adrenal discharge cause not only increased blood-pressure, but, generally, also accelerated pulse. Acceleration of the pulse, therefore, is one of the adaptive functions of the adrenal glands.

2431 South Dearborn Street.

THE TIME THAT THE BREATH CAN BE HELD AS AN INDEX FOR ACIDOSIS

YANDELL HENDERSON, PH.D.
Professor of Physiology, Yale Medical School
NEW HAVEN, CONN.

The importance of acidosis in connection not only with diabetes but also with renal, cardiac and other diseases is being increasingly recognized. For practical clinical purposes it is essential, however, not merely to recognize the condition but also to be able to measure its intensity and to follow its variations—both those spontaneously occurring and those therapeutically induced. For this purpose, determination of the carbon dioxid content of the pulmonary air is rapidly coming to be recognized as the most accurate available method. In principle such a determination may be roughly said to assume that the sensitiveness of the respiratory center is normal and constant, and that the blood stimulus to it is composed of two factors, namely, carbonic acid (CO_2), and other acids (or deficiency of alkali). Whenever the former is found to be automatically decreased below normal, the latter is thereby indicated as above normal; in other words, there is a condition of acidosis.

Unfortunately the determination of the alveolar carbon dioxid is a procedure which, although not difficult for one who has acquired its technic, is quite different from most of the operations to which clinicians are accustomed. Its difficulty varies inversely with the amount of intelligent assistance which the patient can give. For these reasons there appears to be a need for some method of attaining a similar quantitative indication of the degree of acidosis which, even if somewhat less accurate, would be universally and more readily employable.[1]

I believe that such an index of the degree of acidosis is afforded by the length of time that the breath can be held voluntarily. The point of view now coming to be accepted regarding the relation of acidosis to the rate of pulmonary ventilation and the alveolar carbon dioxid is based to a considerable extent on data accumulated by the Pike's Peak expedition.[2] During our stay at the summit and after our descent we had frequent occasion to note that the length of time the breath could be held was shorter as the alveolar carbon dioxid was lower—that is, according to the intensity of the acidosis which causes the increased respiration of great altitudes. The relation was not, however, a direct proportion. While the alveolar carbon dioxid was reduced about one-third, most of the members of the party could hold their breath for less than half as long as at sea-level.

At that time the bearing of such observations on acidosis was not so clear as it is now becoming. We now recognize that one and the same underlying condition in the blood determines the resting alveolar carbon dioxid, the degree of dyspnea on slight exertion, and the duration of voluntary apnea. Lewis, Ryffel, Wolf, Cotton and Barcroft[3] have recently shown that the dyspnea of nephritis is due to an acidosis essentially like that developed in normal persons at great altitudes. Kennaway, Pembrey and Poulton[4] have found that by following the alveolar carbon dioxid in diabetics a warning drop in its tension indicates the approach of coma as long as forty-eight hours beforehand and earlier than any other method. Recent developments indicate that there are a number of distinct forms of acidosis.[5] It is quite possible that the effects on the alveolar air and voluntary apnea of the different forms of this, as yet little understood, condition may show specific variations; but if this proves to be the case, such differences would be of diagnostic advantage rather than otherwise. It will suffice for this preliminary notice to say that a few observations made for me by some of my clinical colleagues have shown that inability to hold the breath at all is an accompaniment of some at least of the forms of acidosis when approaching an acute stage.

While arrangements for a thorough investigation of this topic were under way, there appeared an abstract of a paper by V. A. Stange[6] in which voluntary apnea is recommended as a test of a patient's fitness to undergo general anesthesia. Stange regards the ability to hold the breath as depending on, and an indication of, the condition of the heart-muscle. He states (correctly) that the normal period is between thirty and forty seconds. He considers any period under twenty seconds as contra-indicating general anesthesia. While he appears to have no suspicion as to what it is, as we believe, which the test really depends on and indicates, namely, acidosis, he nevertheless reports observations on a number of chronic diseases in which he finds the duration of voluntary apnea to be abbreviated in about the degree in which acidosis is known from the results of other observers to occur.

At my suggestion a full investigation of this topic has been undertaken by Miss M. P. FitzGerald, who has an extensive experience in this field of work and who made important contributions in connection with the Pike's Peak expedition. The test used consists in directing the patient to sit quiet for at least five minutes; then to draw a full but not abnormally deep inspiration; and to hold it with the mouth closed and the nostrils compressed with the fingers, while the observer notes the time.

The practical utility of this test appears so considerable that it seems advisable to publish it even in its present incompletely studied condition. This is done in the hope also that some of those who may use it will favor us with a report of their observations to supplement and control our own.

1. Compare Boothby, W. M., and Peabody, F. W.: A Comparison of Methods of Obtaining Alveolar Air, Arch. Int. Med., March, 1914, p. 497.

2. Douglas, Haldane, Henderson and Schneider: Phil. Tr. Roy. Soc., 1913, Series B, cciii, 185. FitzGerald, M. P.: Ibid., p. 351.

3. Lewis, Ryffel, Wolf, Cotton and Barcroft: Heart, 1913, v, 45.

4. Kennaway, Pembrey and Poulton: Jour. Physiol., 1914, xlvii; Proc. Physiol. Soc., p. 10.

5. Compare A. W. Sellards: Bull. Johns Hopkins Hosp., 1914, xxv, 101, 141.

6. Stange, V. A.: Russk. Vrach, 1914, xiii, 72; abstr., THE JOURNAL A. M. A., April 4, 1914, p. 1132.

VARIABILITY IN THE RESULTS OF INTELLIGENCE-TESTS

D. D. V. STUART, JR., M.D.
Assistant Psychiatrist, Johns Hopkins Dispensary
BALTIMORE

Although measures for the detection of mental deficiency, and the estimation of its degree when present, are being rather widely discussed at the present time, there is one very important factor which has seldom been emphasized, but which must be taken into consideration in forming conclusions based on the use of intelligence-tests. I refer to the possibility of wide variations in the results of such tests when applied to the same individual by different examiners, if the examiners do not take into account certain features which I shall state later.

In this paper I shall deal only with the Binet-Simon test-scale, as adapted by the late Dr. E. B. Huey for use in the Johns Hopkins Dispensary; but as this scale is the basis of all the commoner forms of intelligence-tests, it would seem that the possibilities for error which must be guarded against in its employment, must likewise be considered in connection with the other varieties.

As part of a general examination, and as a means of gaging *approximately* the extent of mental development in any given case, the Binet-Simon tests are of unquestionable value. Unfortunately, though, there is a wide-spread tendency among both physicians and educators to regard these tests as yielding estimates of the mental age of patients just as accurate from the scientific point of view as are the results of quantitative chemical analyses, and to disregard factors which, if given due weight, might alter materially their deductions.

Experience has shown that the Binet-Simon tests cannot be considered to be exact in the sense that chemical tests are exact; and it is more than doubtful if intelligence-tests can ever be made so. Many things, of which I shall mention those that seem to me the most important, have to be taken into consideration in the application of an intelligence-test scale. The possibility of fatigue on the part of the subject, and to a lesser degree, of the examiner, is one of these. The slowing-up of mental processes during exhaustion is a recognized fact, yet I have seen a physician put a thoroughly tired-out child through the tedious ordeal of a Binet test. The subject's home surroundings and the training he has received are others; for, though the scale is intended to be a measure of native intelligence and not of education, environmental conditions play a large part in an individual's ability to answer correctly certain of the tests, especially for the later ages. Again, and perhaps most important of all, the personal equation as regards both subject and examiner must be considered if these tests are to be properly used. For example, a timid or sulky child and an examiner with a brusque harsh manner, make a bad combination. Under such circumstances, the subject is apt to grow worried or bewildered, and to fail on questions which, under other conditions, he would pass without difficulty. This is of course especially true of those tests done on a time basis. On the other hand, a too sympathetic or inexperienced examiner will often unwittingly suggest the proper responses to tests of which the subject has not the slightest real comprehension. Finally, a patient's general health may have considerable effect on his grading in an intelligence-test. It is surprising how often an apparently low-grade subject is found to be suffering from defective vision or hearing, or some other pathologic condition, the relief of which is followed by marked improvement in his mental status.

These factors are too frequently completely ignored, with the result that diagnoses of mental deficiency are made when no deficiency exists, and conversely, that parents are sometimes told that there is nothing the matter with a child who is in reality handicapped by an incurable constitutional defect. It is this point of variability in the results of the tests that I wish to illustrate by means of the appended table.

All the cases quoted are white males, pupils in the special class for defectives in one of the public schools of this city. In each instance, the first examination was made in the Johns Hopkins Dispensary; and on the result of this first test was based the recommendation which was the means of obtaining the child's admission to the special class. The second and third examinations were conducted at varying times after entry into the special class, the training given in which is largely manual in character. The physical age is that reported by the person accompanying the child at the time of the first examination. In the grading, a plus-mark indicates that the subject received sufficient credits to pass at the mental age given, and any number of additional credits not exceeding four. Thus, "mentality 6+" shows that the subject responded correctly to enough tests to enable him to grade up to six years, plus one or more additional tests, up to and including four. The examiners were, with three exceptions, physicians, the exceptions being postgraduate students in psychology at Johns Hopkins University. In only a single case was the same individual tested more than once by any one examiner. This was Case 6, in which instance the first and third examinations were both conducted by me.

VARIATIONS IN THE RESULTS OF INTELLIGENCE-TESTS, CONDUCTED BY DIFFERENT EXAMINERS UNDER DIFFERENT CONDITIONS

Case	Age, Years	First Examination Date	Mentality	Second Examination Date	Mentality	Third Examination Date	Mentality
1. J. M.	15	12/10/12	7+	1/23/13	7+	12/ 3/13	8+
2. L. K.	11½	1/ 3/13	7	1/15/13	5+	10/27/13	7
3. D. F.	12	1/15/13	9+	12/10/13	10	2/28/14	8
4. J. W.	10½	1/21/13	7+	12/ 3/13	9	4/20/14	10
5. E. D.	9	9/15/13	5+	12/10/13	5+	4/ 4/14	4
6. R. H.	13	9/29/13	10+	12/10/13	12+	4/ 4/14	10+
7. L. P.	9	11/ 1/13	5	12/10/13	6+	4/ 4/14	5
8. A. D.	14	12/15/13	10+	2/18/14	10+	4/18/14	9+
9. H. T.	12	12/31/13	7	2/18/14	7+	5/ 9/14	6+

While the cases cited are too few in number to afford a basis for any general conclusions, it is nevertheless impossible to deny the significance of the results obtained. These show, as will be noted, variations of from one to three years in the estimated mentality of the individual subjects, the average being between one and two years. The final test, as compared with the first, shows apparent progress in two cases and apparent regression in four; while in three cases the first and last results coincide. In no case did all three tests agree. If each successive examination showed progressively higher mentality, the objec-

tion might be made that all the cases in the table happened to be subjects who had not reached their limit of development when first tested, and that the special-class training had improved their condition. The fact that the majority show apparent regression or remained stationary contradicts this, and the only conclusion possible is that the differences in the results were caused by the variability of the tests themselves.

If intelligence-tests, when conducted by examiners with a knowledge of psychology and psychiatry, show such great divergence in their results, the assumption seems justified that the variation would be even more marked in inexperienced hands. It would also seem that it is time to stop regarding such tests as an infallible method of determining a patient's degree of mentality, independently of other considerations.

935 St. Paul Street.

THE USE OF A NO-SOUND STROKE IN PERCUSSING OUT THE BOUNDARIES OF SUPERFICIAL DULNESS OF AIRLESS BODIES

HENRY LEE SMITH, M.D.
Instructor in Medicine, The Johns Hopkins University
BALTIMORE

In the recent editions of the more important books on physical diagnosis one sees at a glance that the strong percussion stroke is being gradually displaced by lighter percussion as a more accurate method of determining the deep dulness of air-free bodies.

Goldscheider[1] has been particularly active in this field of work. He uses the lightest percussion (*Schwellenwertsperkussion*, "threshold of audibility") in ascertaining the deep heart-boundaries, liver edge, upper boundaries of lung and small areas of pulmonary infiltration.[2] The ordinary method of finger-finger percussion is employed except that the pleximeter finger is held in the position of Plesch[3] or, preferably, his own method of *Griffelperkussion*,[4] which consists in the use of a small glass rod as the pleximeter. The upper end is slightly curved, or covered with rubber, and is lightly percussed with the right middle finger; the lower end is placed in the intercostal spaces parallel to the margin of the borders to be delimited. He advises that the rod be held obliquely in order to give the *Schallstrahl eine gewisse Richtung*[4] — orthopercussion. He controlled the method by orthodiagraphic findings[1] and by experiments on the cadaver, claiming for it many advantages.[4]

Sahli vigorously opposes the method because "it does not depend on any generally applicable acoustic principle, and because it disregards the didactically important distinction between deep and superficial dulness."[5] He says that "to appreciate superficial boundaries it is a good general rule that we should percuss as lightly as possible, and a good criterion of the desired strength is to evoke practically no note over the dulled areas."[6]

On the other hand, Orlowski,[7] among others, has gained satisfactory results by adopting Goldscheider's method of orthopercussion, particularly in mapping out the lower border of the liver. He modifies Goldscheider's method somewhat by using the right index finger as plexor and the left index-finger as pleximeter; but the latter is held in the position of Plesch.

Where fecal masses or gaseous distention of the large intestine interfere with accurate work a saline or enema is given. He claims correct findings in 86 per cent. of livers with soft edge and in 92 per cent. of those with hard edge.

Sahli[5] tells us that "by light percussion the lower liver boundary is generally easy to determine." Cabot[8] laconically remarks that "percussion of the lower edge of the liver is notoriously unreliable." Butler,[9] who strongly upholds Goldscheider's method, admits that "it may be difficult to find the lower limit of the liver in the median line in front because of the thinness of the left lobe of the liver and the dulling effect of the muscular layers of the recti."

Owing to the inconstant results obtained by my students and myself in percussing out the areas of superficial heart and liver dulness, it seemed clear to me that the fault lay in the varying strength of the stroke, and that uniform results could be obtained only when each individual examiner percussed with a blow of equal force. To attain this end I devised some eight or ten years ago the following method, which I have since employed:

To determine the outline of the area of superficial cardiac dulness the patient is placed in the usual dorsal decubitus, and is directed to suspend respiration. The examiner's ear is held close to the patient's body. There should be absolute quiet in the room. A point is selected where the heart is known to be uncovered by lung. The pleximeter finger (left middle) is laid gently on this area, the other fingers remaining elevated. The second phalanx is now percussed with the right middle finger. A sound is at first produced by moderately strong percussion which is quickly graded down, by lessening the force of the blow to a *no-sound* or control stroke. This control stroke, which proves inaudible over that portion of the heart's surface uncovered by lung (area of superficial dulness), produces a faint sound over the area of the deep cardiac dulness, and a more decided one over the lung region just outside of it. The no-sound stroke having been obtained, one percusses with a blow of equal force from the area of deep dulness toward the area of superficial dulness. The borders of the latter are instantly recognized by the sudden disappearance of the faint sound obtained over the former. The outstretched pleximeter finger, resting gently in its entire length on the part percussed and parallel to the border to be determined, edges its way quickly in short lateral (pendulum-like) swings toward the objective border, and receives at the end of each swing two short control taps quickly delivered. The

1. Goldscheider: Ueber Herzperkussion, Deutsch. med. Wchnschr., 1905, xxxi, 333 and 382.
2. Goldscheider: Ueber abgestufte Lungenperkussion, Verhandl. d. Kong. f. inn. Med., 1907, xxvi, 284.
3. Plesch uses the right middle finger as plexor, and delivers the blow just above the flexed second phalangeal joint of the left middle finger, the first and second phalanges of which remain rigid and are held vertically, the finger-tip only coming in contact with the patient's body. Ueber ein Verbessertes Verfahren der Perkussion, München. med. Wchnschr., 1902, xlix, 620; Einiges über Perkussion, Deutsch. Arch. f. klin. Med., 1908, xciii, 201.
4. Goldscheider: Zur Schwellenwertsperkussion des Herzens, Deutsch. med. Wchnschr., 1907, xxxiii, 1121.
5. Sahli, Hermann: Diagnostic Methods, Philadelphia, Saunders & Co., 1911, p. 216.
6. Sahli: ibid., p. 210.
7. Orlowski: Contribution à l'exploration du foie: Au moyen de la percussion, Presse med., 1912, xx, 643.
8. Cabot, R. H.: Physical Diagnosis, New York, Wood & Co., 1913, p. 363.
9. Butler: Diagnostics of Int. Med., New York, Appleton, 1913, p. 501.

other fingers, as stated, are held up from the body surface, allowing the plexímeter finger free action. This maneuver serves as an excellent means for comparing delicate shading in sound, and also in detecting its abrupt disappearance.

The identical technic is used in ascertaining the superficial limits of the liver. The examiner obtains the control (no-sound) stroke at a given point over the exposed surface. He then readily delimits the superficial boundaries by noting the sudden disappearance of the faint sound, as he percusses in a line toward the dulled area, manipulating the plexímeter finger as described.

In persons with very flaccid abdominal walls and in those with marked diastasis recti abdominis, the accuracy of the method for percussing out the lower limit of the liver may be readily proved by the prompt disappearance of the faint percussion sound at a point where the liver edge is just palpable.

After a little practice in the use of the method one almost unconsciously uses a stroke of no greater force in outlining the obtainable deep borders of cardiac and hepatic dulness, only, stronger pressure on the part of the plexímeter finger is added to pick up the relative resistance which is experienced at the instant of slight diminution in the resonance.

The no-sound control percussion stroke is also applicable in mapping out the contour of thoracic aneurysm, dulled lung-areas, abdominal tumors and the like.

2701 Calvert Street.

INTESTINAL MYIASIS

WITH REPORT OF CASE

H. C. BLANKMEYER, M.D.
SPRINGFIELD, ILL.

In 1907 I reported[1] a case of infection with *Anthomyia canicularis* as the eighteenth on record at that time, five having been reported in America, five in Germany and the remainder scattered throughout France, England, Sweden and Argentina. At that time it was stated the *Anthomyia* was the larva of the very small black house-fly so often seen on windows. This classification of the parent was rather indefinite and confusing. It is now positively known that the *Anthomyia canicularis* is the larva of the small black flower-fly known, according to Stitt, as *Anthomyia pluvialis*.

The passing of dipterous larvae in the stool is uncommon and in most cases causes no grave symptoms as the result of their invasion of the intestinal tract. Cachagne, however, reports four deaths following intestinal ulceration accompanied by dysentery. Finlayson of Glasgow has reported an interesting case in a physician who after protracted constipation and pain in the back and sides passed large numbers of the larvae of the *Anthomyia*.

F. C. Wellman records a case of intestinal myiasis with dysenteric symptoms due to the larvae of *Anthomyidae* and *Sarcophaga*. From eighteen to twenty-one larvae were passed after doses of castor oil. The larvae hatched into flies in about a fortnight. The flies, which are often found parasitic in man, lay eggs on decaying vegetables and are suspected of infecting the person during defecation by depositing eggs in and around the anus, which later are thus incubated. This, however, is a recent theory; the eggs are usually ingested. The larvae vary in size from ⅛ to ¼ inch in length, and can be readily seen with the naked eye. The body proper is divided into segments, from ten to fourteen in number, according to age, with lateral branchii or gills. They are beset bilaterally with feathered bristles, two to each segment. The larvae are light brown in color, and when passed in the stools are more or less active. They invade the intestine and produce disagreeable symptoms until vomited up or passed with the feces. The life of the larvae in the human intestine is about two weeks. They are ingested as eggs and hatched out in the small intestine and are highly resistant to all forms of treatment. At the time the first case was referred to me I was convinced that I would never see a similar case again.

CASE 2.—Mrs. E. W., aged 32, widow, native of Illinois, referred by Dr. D. W. Deal of this city, has lived on a farm the greater portion of her life. Personal history is negative. The present illness began fourteen years ago with nausea and vomiting. There was irregular menstruation. At this time the patient received more or less extensive treatment for uterine trouble. She was given ferrous sulphate and states that she was treated for every known disease. After several months' illness she began passing larvae and was compelled to resort to enemas. She was married and at once became pregnant, had constant nausea and finally aborted at the third month. She had several uterine hemorrhages and was curetted with poor results. She became very nervous and slept poorly, had no appetite and was unable to retain anything but egg lemonade. Three years ago, after separating from her husband, she noticed frequent shooting pains in the rectal region and at times abdominal tenderness was marked. There was much mucus in the stools and she experienced the sensation of the larvae crawling in the intestine. Occipital headaches are marked, with remissions. Two years ago constipation became chronic and is so to-day. There is burning urination at intervals. At present the menses are regular and not painful. There is almost constant abdominal distention at this time. The pulse is soft and compressible, not rapid, pupils contracted, and respirations normal. She is an adept at taking her own temperature and states that it varies from 95.6 to 101. The appetite is variable; there is a bad taste in the mouth, and the tongue is furred and ridged and red at the edges. Her complexion is sallow and she is generally nervous. She is able to be up and around the house and do light work and reading.

Treatment consists in 1-dram doses of magnesium sulphate before breakfast and at 4 p. m. with 5-grain doses of salol four times a day. The customary parasiticides have been tried with no marked benefit.

She passes from four to fifty larvae per day now and is showing some signs of improvement. The nausea has disappeared, her nervousness is less evident and there is a slight gain in weight. The prognosis would seem to be favorable.

1. Blankmeyer, H. C.: Infection with Fly Larvae, Anthomyia Canalicularis, THE JOURNAL A. M. A., May 4, 1907, p. 1505.

Pocket Flash-Lamp for Transillumination.—The electric pocket flash-lamp makes an excellent light for transillumination of tumors of the scrotum. One of large size is to be preferred, with deep-set lens which may be so pressed against the tumor that light will not escape at its border. If, however, extreme convexity of the lens permits this, or a small tumor, the lens may be unscrewed and removed. The bulb, left deep in the shaft, furnishes a satisfactory substitute for lamps of similar construction that require connection with the electric current. For country doctors or those in small towns without adequate facilities for the operation of other apparatus, this is a practical and convenient method of applying a simple, but valuable diagnostic procedure.—A. L. GLAZE, JR., M.D., Athens, Ala.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading-matter.

SATURDAY, JULY 25, 1914

NEWER VIEWS OF THE FUNCTIONS OF THE ADRENALS

When an extract of the medulla of the suprarenal bodies is introduced directly into the circulation a series of profound physiologic reactions may be observed. The most important of these changes are: a cessation of the activities of the alimentary canal; a notable shifting of the circulation from the great vessels of the abdomen to the lungs, heart, limbs and central nervous system, frequently manifesting itself further in a rise in peripheral arterial pressure; an increased cardiac vigor; an augmentation of the sugar-content of the blood. These are the prompt results of what may be termed the "heroic" mode of experimentation—the administration of considerable doses of the active agent of the adrenals.

The question has often been raised whether or not comparable phenomena take place in the ordinary physiologic performances of the body; whether or not epinephrin is continually being secreted in small amounts to maintain the normal tonus of the blood-vessels and to keep the content of the blood-sugar up to its normal level. We have previously reviewed the current ideas on these topics and suggested the improbability of the vasomotor and perhaps the entire sympathetic apparatus being kept in tonic activity by a persistent minimal suprarenal discharge.[1] W. B. Cannon of the Harvard Medical School has offered a novel and ingenious interpretation of the service which the adrenals may render to the organism—an emergency function, as he terms it.[2] To understand it one must recall that the bodily alterations noted above—the changes in the circulation, hyperglycemia, etc.—are also caused by nervous discharges along sympathetic pathways; discharges such as are sent forth in crises of pain and great emotion. Furthermore, the adrenal medulla is subject to central nervous influences coming to it by way of the splanchnics, the artificial stimulation of which will induce a secretory activity with a resultant increase of epinephrin in the blood. The next step was to prove that the adrenal glands can actually be made to discharge their products promptly into the circulation when they are affected by vigorous nervous impulses coming to them normally by way of the pathways indicated.

If it prove true that insignificantly minute quantities of suprarenal secretory products enter the circulation in the usual routine of the bodily functions, of what value to the organism are the extraordinary discharges of epinephrin called forth by the major emotions? As Cannon says, the cessation of activities of the alimentary canal (thus freeing energy for other parts); the shifting of the blood from the less insistent abdominal viscera to the organs immediately essential to life itself, such as the lungs, the heart, the central nervous system and, at critical moments, the skeletal muscles as well; the increased cardiac vigor; the quick abolition of the effects of muscular fatigue, the mobilizing of energy-giving sugar in the circulation—these are the changes which occur when fear or rage or pain causes the adrenal glands to pour forth an excessive secretion.

Muscles work preferably by utilizing the available carbohydrate of the organism. Great muscular activity considerably reduces the quantity of stored glycogen and of circulating sugar. The outpouring of sugar which is attendant on the major emotions and physical pain and which leads to hyperglycemia may be interpreted as a biologic adaptation to the necessities of struggle, fighting or flight. The epinephrin, which we now know is set free by pain and by fear and rage, would put the muscles of the body unqualifiedly under the control of the nervous system; for precisely as removal of the adrenals has a well-known debilitating effect on the muscular system, injections of their secretory products act as an invigorator. Epinephrin prepares fatigued muscles for better response to nervous impulses sent forth in great excitement.[3] This provision, together with the abundance of energy-supplying sugar newly flushed into the blood as the consequence of the epinephrin present, would give to an individual in which these mechanisms are most efficient the best possible conditions for putting forth supreme muscular efforts. Cannon even believes that if these results of emotion and pain are not "worked off" by action, it is conceivable that the excessive epinephrin and sugar in the blood may have pathologic effects.[4]

More recently Cannon and Mendenhall[5] have noted that emotional excitement occasions very rapid clotting

1. The Suprarenals and Vasomotor Tonus, editorial, THE JOURNAL A. M. A., March 7, 1914, p. 778; also Hoskins, R. G., and Wheelon, H.: Adrenal Deficiency and the Sympathetic Nervous System, Am. Jour. Physiol., 1914, xxxiv, 172.

2. Cannon, W. B.: The Emergency Function of the Adrenal Medulla in Pain and the Major Emotions, Am. Jour. Physiol., 1914, xxxiii, 356.

3. Gruber, C. M.: The Fatigue Threshold as Affected by Adrenalin and by Increased Arterial Pressure, Am. Jour. Physiol., 1914, xxxiii, 335.

4. Cannon, W. B., and D. de la Paz: The Stimulation of Adrenal Secretion by Emotional Excitement, THE JOURNAL A. M. A., 1911, lvi, 742.

5. Cannon, W. B., and Mendenhall, W. L.: Factors Affecting the Coagulation Time of the Blood, IV. The Hastening of Coagulation in Pain or Emotional Excitement, Am. Jour. Physiol., 1914, xxxiv, 251.

of the blood. This may properly be associated with a discharge of epinephrin, which also has been shown[6] to hasten clotting and is known to be liberated by pain and strong emotion. This phenomenon of the blood may also be regarded as an adaptive process, useful to the organism. Prompt clot-formation tends to conserve the blood by sealing opened vessels in the injury which may accompany pain or may follow the struggle that fear or rage may occasion.

Such considerations help to round out Cannon's hypothesis of the emergency function of the adrenals, especially when taken in connection with the fact that the absolutely essential organs — the heart, lungs and brain, as well as the skeletal muscles — in times of excitement or critical moments when the adrenal glands discharge, are abundantly supplied with blood from organs of less importance. As Cannon concludes, each of these changes in the body is directly serviceable in rendering the organism more efficient in the struggle which fear or rage or pain may involve; for fear and rage are organic preparations for action, and pain is the most powerful known stimulus to supreme exertion. The organism which with the aid of increased adrenal secretion can best muster its energies, can best call forth sugar to supply the laboring muscles, can best lessen fatigue, and can best send blood to the parts essential for the run or the fight for life, is most likely to survive. Such, according to the view here propounded, is the function of the adrenal medulla in times of great emergency.

SODIUM FLUORID—A POISON

Although from the point of view of superficial chemical classification the compounds of fluorin belong in the group of halogen salts with chlorids, iodids and bromids, they present many points of difference from the latter. This is particularly true with respect to the behavior of fluorids in the animal organism. They have long been regarded as decidedly toxic substances and have found no recognized acceptance in pharmacotherapy. This failure of fluorids to be used in medical practice need not be attributed solely to their admittedly poisonous nature; for all too often harmful as well as inert substances have been accepted as therapeutic agents for reasons which even historical research cannot discover.

The fluorid of sodium, which alone has any prominent significance in commerce, has considerable antiseptic power, putrefaction being delayed by the addition of one part to five hundred of fluid, while one part in two hundred completely arrests the growth of bacteria. For this reason sodium fluorid was at one time suggested as a surgical antiseptic. One catalog of pharmaceutical preparations actually mentions it as used internally in "epilepsy, malaria, ague, tuberculosis and skin diseases," and externally as an antiseptic dressing for wounds and injuries, remarking further that it does not attack nickel-plated instruments. The internal dose is given by this publication as from $^1/_{12}$ to $^1/_6$ grain (from 0.005 to 0.01 gm.) in solution with sodium bicarbonate; as an application for wounds a solution is suggested of from 0.5 : 1,000 to 10 : 1,000, and a solution of from 0.5 to 1 per cent. for mouth-washes or for injections in vaginitis. Sodium fluorid, being antiseptic, is said to be used in alcohol distilleries to prevent the formation of injurious quantities of lactic and butyric acids during fermentation of the mash, and also for purifying vats used in fermentation and for disinfecting apparatus employed in distilleries.

If one turns to the actual descriptions of the behavior of sodium fluorid in the animal body and its tissues, the reports do not encourage its use. Even dilute solutions when brought into contact with the mucous membranes produce irritations. In the eye they may cause congestion and inflammation of the conjunctiva and defects in the cornea. In the gastro-intestinal tract symptoms of pronounced irritation appear. Solutions of the fluorids are absorbed with great difficulty by the intestinal epithelium. After subcutaneous injections, suppuration and necrosis may occur.

These acute results from the use of sodium fluorid are, to say the least, admonitory against it. Inasmuch as in appropriate dosage it is a poison which acts simultaneously in the most diverse parts of the organism, any theory as to its action must be based on some general or broadly applicable principle. The most probable one at present involves the property of fluorids, like oxalates, to precipitate calcium as the insoluble salt calcium fluorid wherever the reaction can take place in the body. The blood or tissues may thus be deprived of lime in regions in which it is physiologically needed.

The immediate occasion for taking up anew any consideration of the toxicology of fluorids lies in reiterated reports that they are being used, as they doubtless were a few years prior to the agitation against food preservatives, as admixtures in articles of diet. A commercial motive is readily found in the excellent antiseptic properties of sodium fluorid. For this reason, renewed studies of the effects of repeated administration of this chemical are welcomed. Schwyzer[1] has found in animals that the continued intake of small doses of sodium fluorid, in amounts of from 1 to 2 mg. per kilogram of body-weight, brings about detectable symptoms: increased coagulability of the blood, tendency toward venous thrombosis and indications of irritation of the bone-marrow. The chemical result is a loss of chlorin and of calcium

6. Cannon, W. B., and Gray, H.: Factors Affecting the Coagulation Time of the Blood, II. The Hastening or Retarding of Coagulation by Adrenalin Injections, Am. Jour. Physiol., 1914, xxxiv, 232.

1. Schwyzer, F.: Einfluss chronischer Fluorzufuhr auf den Chlor- und Calciumstoffwechsel, Biochem. Ztschr., 1914, lx, 32.

from the bones. The elimination of chlorin is attributable to the unlike "affinities" of chlorin and fluorin. The chlorin is excreted through the kidneys, the calcium in both urine and feces. The body may become deficient in chlorin in this way. There is, furthermore, frequently a decided disappearance of fat from the bone-marrow owing to the invasion by lymphoid elements.

Such experimental observations speak for themselves; at best they should force the users of fluorids, if there still be such, to furnish rigorous proof of the harmlessness of the preservative. Meanwhile we shall repeat verbatim the conclusions of Schwyzer: Fluorin preparations, administered steadily even in the small dosage of 1 mg. and less per kilogram of body-weight per day, are poisonous. They should be completely excluded from the nutrition of man and that of domestic cattle.

PATHOLOGIC ASPECTS OF VAGRANCY

The acting superintendent of the New York Municipal Lodging-House has made a study of about two thousand vagrants. The results of his examination, which he has embodied in a report to the Commissioner of Public Charities, are of special interest to physicians because they disclose the fact that the immediate etiologic factor in vagrancy is not, in the great majority of instances, economic, as is usually thought, but pathologic. The common impression is that a great many of the vagrants of large cities are men whose advancing years have thrown them out of employment. This is the day of the young man; many firms and corporations refuse to take on men over 40, and some persons think that "the advent of the young man into business has practically crowded the aged into the poorhouse." It was found, on the contrary, that the majority of the men who applied to the New York Municipal Lodging-House were young—indeed, in the very prime of life. Of the two thousand men examined—and they were selected at random—5 per cent. were under 21, while scarcely a greater proportion—altogether 6.85 per cent.—were over 60.

It is generally assumed that in a city like New York, which receives every year many immigrants and in which a large part of the population is of foreign birth, many, if not indeed the majority, of the vagrants will prove to be foreigners who have become a charge on the community because, handicapped as they are by difference of language and of customs, they are unable to make their way in this country. There is an idea too, that a great many of the vagrants in large cities everywhere are not city-born, but have been attracted to the centers of population because of the ease with which an unearned livelihood may be obtained there. New York, as the gateway of by far the greatest part of the immigration of this country, and as the possessor of a municipal lodging-house famous for its comfort, is best situated for the determination of this question.

The report, however, contradicts all of these *a priori* impressions. Of the two thousand men examined, only forty, that is, 2 per cent., had been in this country less than three years, while only 9 per cent. had been in New York less than one year. The average time of residence in the metropolis proved to be thirty-two years and four months; as thirty-six was the average age of the men altogether, they had lived practically all of their lives in the city and the superintendent adds that "practically all of these two thousand were our own native sons."

About 35 per cent. of the homeless men who seek the shelter of the municipal lodging-house are unemployable. Twelve per cent. of them showed definite evidences of defective mentality. The infirm from age and those handicapped by the loss of a member represent about as many more. About 10 per cent. are habitual loafers and confirmed beggars, who have lost the habit of work. Sixty-five per cent. are willing and able to work but are hampered partly by lack of skill and partly by the fact that they are victims of the seasonal trades which employ a great many men at certain times of the year and very few at others, leaving men without any definite occupation for months every year.

Alcohol played an important rôle in the etiology of these tendencies to vagrancy. The report says that about 50 per cent. of these men proved to be excessive drinkers, a fact which is not nearly so significant as the admission of over 30 per cent. that intoxicating liquors were the sole cause of their dependency and wretchedness. The physician's cardinal interest in this social problem is centered in the alcoholism and mental defectiveness, though a great many other cases would be diagnosed under some of the forms of discouragement and psychasthenia, if only the patients could afford to be cared for by physicians who make such diagnoses. When out of work a great many of the men become discouraged and depressed and then are unable to rouse themselves to take up their labor again. The whole problem is one of social aid, rather than punishment and repression, for such men, being unfitted by character for the present struggle for existence, cannot be held responsible for their condition.

In a word, the actual study of conditions in New York, as a typical American large city, emphasizes the need for the physician's interest in social problems. That city may fairly be taken above all to represent other large cities in its relation to our immigration for it retains more than its share. It is, therefore, very clear that vagrancy among us is distinctly an American and not an immigrant problem. It is our own people who need care to prevent the occurrence of

social breakdowns that are as serious in their way for the individual and the community as physical breakdowns. The physician probably understands all the factors of the problem as thus presented better than any one else. This is the day of prevention rather than cure, and knowledge is the best possible element in prophylaxis. Undoubtedly social work in connection with dispensaries can do much to relieve this condition and with the decrease of infectious disease social service becomes the physican's next duty in prophylaxis.

THE NERVE-CONTROL OF THE THYROID GLAND

The question as to the innervation of the so-called glands of internal secretion has proved to be one of the most difficult, as it is one of the most important, problems of modern physiology. The belief that an organ like the thyroid, for example, is in some manner under the dominance of the nervous system is fostered by numerous analogies. Other similar cellular structures, notably the secretory glands of the alimentary system, are subject to the influence of direct and indirect nervous control. Vasomotor fibers regulate their blood-supply, and secretory fibers affect more directly the production and discharge of their specific products from the gland-cells. Anatomically, the thyroids furnish an added analogy in that, like the digestive glands, they are richly supplied with nerves. The latter, however, for the most part follow the blood-vessels, which may account for the fact that earlier investigators were content to assign to the thyroid nerves a purely vasomotor function.

As the precise nature of the active product furnished by the thyroid gland is still unknown, it has been practically impossible to search for a secreted substance, after its supposed discharge from the gland, with any sanguine hope of success. Many facts, of course, point to the probability that the active substance in the thyroid contains iodin in combination with protein and that the physiologic activity is in proportion to the quantity of iodin in the combination. Some attempts have been made to demonstrate the presence of this active substance in the blood by means of a biologic reaction, but none of them have thus far been really successful. This is not surprising, however, if one considers how vascular the gland is and how small a quantity of the active agent must be distributed through the blood leaving the gland in the course of the entire day.

Leon Asher[1] and his collaborators at the Physiologic Institute in the University of Berne, Switzerland, have attempted by an indirect method to demonstrate a nerve-control of the thyroid gland. Their experiments were made to determine if any phenomena could be observed, after stimulation of the thyroid nerves, which would indicate that an increase in thyroid secretion discharged into the blood had been produced thereby. Accordingly they compared the excitability of certain nerves before and after stimulation of the thyroid nerves, and also the effect of a small intravenous injection of epinephrin before and after such stimulation. They concluded that, under otherwise exactly similar experimental conditions, a stimulation of the depressor nerve or injection of epinephrin was more effectual during stimulation of the thyroid nerves than shortly before it. That both of the symptoms, namely, the increased excitability of the depressor and the more effective action of epinephrin, actually depend on an internal secretion of the thyroid and not on any accompanying circumstance of nerve stimulation, is proved by the fact that on extirpation of the thyroid the symptoms no longer appeared; while the action of intravenous injections of thyroid extracts was the same as that produced by stimulation of the thyroid nerves.

Realizing, as many other investigators have, that such complicated experiments and indirect evidences, though extremely suggestive, are far from satisfying or conclusive, Rahe, Rogers, Fawcett and Beebe[2] have attacked the problem of nerve-control by experiments of a different character. Briefly, the plan of experiment was to determine, first, whether the iodin content of the two lobes of the normal thyroid gland from the same animal is identical; and secondly, whether stimulation of the nerves leading to one lobe causes a loss in its iodin content. If the two lobes of the normal thyroid are identical in iodin content they may serve as controls of each other. Granting this to be true, it was their hypothesis that stimulation of the nerves entering one lobe might cause a change in the iodin content because of the resulting discharge of iodized protein from the gland.

Although the iodin content varies widely in different individuals, the two lobes are wonderfully constant. From the analytic data supplied by a very accurate method the difference shown falls within the limits of error. It seems evident that one lobe of the thyroid may serve as a control of the other, provided both lobes are normal. The average difference of iodin, expressed as milligrams per gram of fresh gland, between the two thyroid lobes of seven normal dogs was 0.0055 mg. The average difference found when the superior vessels, with accompanying nerve-fibers, of one lobe were stimulated was 0.1351 mg. The average difference found when the stimulus was applied to the vagus peripherally to the superior

1. Asher, L., and Flack, M.: Die innere Sekretion der Schilddrüse und die Bildung des inneren Sekretes unter dem Einfluss von Nervenreizung, Ztschr. f. Biol., 1911, lv, 83. Asher, L., and von Rodt, W. E.: Die Wirkung von Schilddrüsen und Nebennierenprodukten und die sekretorische Innervation der Schilddrüse, Zentralbl. f. Physiol., 1912, xxvi, 223. Ossokin, N.: Zur Frage der Innervation der Glandula Thyroidea, Ztschr. f. Biol., 1914, lxiii, 443.

2. Rahe, J. M., Rogers, J., Fawcett, G. G., and Beebe, S. P.: The Nerve Control of the Thyroid Gland, Am. Jour. Physiol., 1914, xxxiv, 72.

ganglion, the nerve being cut centrally to the ganglion and ligated peripherally to the stimulus, was 0.1699 mg. The average difference found when stimulus was applied to the intact vagus was 0.264 mg.

In these experiments, conducted in the department of experimental therapeutics at the Cornell University Medical School in New York, a loss of iodin from the thyroid was observed in every case after nerve stimulation. According to the investigators, there seems to be no reasonable doubt from these results that the thyroid is at least in part under nerve-control, and that its physiologically active substance is discharged into the circulation in response to a nerve stimulus.

EXERCISE AND THE HEART

The importance of acquiring more information than is now available with respect to the physiology of exercise has not lacked emphasis in THE JOURNAL.[1] Many of the facts which are learned find an immediate application in the domain of practical medicine and notably in the clinic of cardiac diseases. The enlargement of the heart, for example, may be attributable either to hypertrophy of its musculature or to an increase in its blood-volume. Both of these conditions are affected by muscular activity or exercise, but the interrelations which are involved have never been fully elucidated.

Obviously a precipitate change in the size of the heart must be dependent primarily on changes in its content of blood. Aside from this, however, are those permanent enlargements which represent the result of long-continued vigorous exercise of the heart. They may be conditioned by extreme bodily activity calling for a liberal blood-supply and thus indirectly involving the heart in unusual performance; or they may also be brought about by mechanical difficulties in the circulation whereby the cardiac musculature is compelled to work against an increased peripheral resistance. The effect of long-continued vigorous muscular effort is seen at necropsy in the enlarged heart musculature of those who have engaged in active military service, and in professional athletes. In animals the same functional cardiac hypertrophy appears in racehorses and other species accustomed to vigorous activity instead of the more lethargic existence of many of the domesticated types. This phenomenon of enlargement is familiar and readily explained, for the heart as for any other muscle or groups of skeletal muscles, as the result of systematic use. Our muscles are said to "grow" with exercise.

Less is known, on the other hand, about the *immediate* effects of exercise on the heart. The usual observations ordinarily follow the exertion and give indication of the after-effects only. Experiments on animals involving the direct inspection of the heart in the opened chest are unsatisfactory because the requirements of the circulation are notably altered under such conditions. Roentgenoscopy has furnished a far more adequate method of investigation in this field than was ever available before its introduction. It has reached a high degree of perfection in the hands of Zuntz and Nicolai of Berlin, who have devised a scheme for making observations by means of a stationary ergometer directly on the human subject during the period of work. With such an apparatus they have now collected numerous measurements of the outlines of the heart.[2] These show that during exercise the heart becomes slightly enlarged; immediately thereafter it is suddenly decreased in size below the normal. From the latter fact the German physiologists conclude that ordinarily the heart contains a small undischarged residue of blood which is expelled under the conditions immediately succeeding the cessation of work.

If this interpretation of the temporary diminution of heart-volume following vigorous exercise is correct, the residual blood remaining in the ventricles after a normal systole may be looked on as a reserve supply to meet any emergency call which may suddenly arise in some distant organ, for in such an event the dilatation of these peripheral vessels and the consequent more ready passage of blood would lead to a fall in blood-pressure in the aorta. Obviously under these conditions a constant systolic efficiency would permit a more complete discharge from the ventricle in the face of decreased peripheral resistance. Perhaps this phenomenon is one of the almost innumerable "factors of safety" which are coming to light with the progress of knowledge.

INULIN IN THE DIETARY OF THE DIABETIC

The search for a carbohydrate to replace starch in the dietary of the diabetic patient which will be utilized satisfactorily by him has been a long one. Thirty-five years ago inulin was suggested as a suitable substitute, and its value for the purpose indicated has been under discussion more or less ever since. Inulin is a polysaccharid of levulose, comparable in this respect with starch which is the polysaccharid of dextrose. It occurs in the roots of many of the composites, particularly in the tubers of the dahlia, artichoke, elecampane and other similar plants; so that its use in the dietary might easily come within the range of economic possibility.

No enzymes which can convert inulin into sugar have been found in the digestive tracts of the higher animals. It happens, however, that the normal acidity

1. The Hygiene of Athletic Sports—Rowing, editorial, THE JOURNAL A. M. A., April 11, 1914, p. 1172.

2. Zuntz, N., and Nicolai, G. F.: Füllung und Entleerung des Herzens bei Ruhe und Arbeit, Berl. klin. Wchnschr., May 4, 1914, p. 821.

of the gastric juice is sufficient to effect a partial hydrolysis of inulin to levulose in suitable conditions. This would seem to be the only process, therefore, by which inulin can be rendered available for absorption, unless the carbohydrate is converted into appropriate products by the agency of micro-organisms in the alimentary tract. Dr. H. B. Lewis[1] reviewed the situation in THE JOURNAL some time ago. He noted that inulin fed to a healthy man was not eliminated in the feces; but the marked intestinal fermentation which was observed to follow the ingestion of the carbohydrate suggested that it is impossible to administer more than comparatively small amounts without discomfort, and that aside from a possible small formation of levulose in the stomach, the bulk of the product is decomposed with the formation of products other than carbohydrates.

H. Strauss of Berlin has championed the use of inulin-yielding vegetables which he believes to be employed with advantage by many diabetics. Largely owing to his hearty advocacy, the recommendation of these food materials in the dietary of the diabetic is still continued in current text-books, particularly the Continental ones.[2] Unless it is assumed that inulin as such is actually utilized after absorption or in the form of some unknown and unusual derivative, the probability arises that any available inulin will reach the circulation as levulose. The inulin problem thus becomes one concerning the relative availability of levulose for the diabetic — a question that has been given various answers. At best it can only be said to be tolerated by various diabetics in quite unlike degree.

Inasmuch as it has been shown that levulose readily yields glucose in animals rendered diabetic by phlorhizin, one might expect that any significant conversion of inulin to levulose either in the stomach or elsewhere would manifest itself by a rise in the glucose output in the urine of such subjects. Lewis and Frankel[3] have put the matter to a test, with the anticipated result that no significant amount of extra glucose was eliminated after the feeding of inulin. The feeding of levulose in comparable amounts to the same diabetic animals resulted in an abundant excretion of corresponding extra glucose. There is little probability, therefore, that an appreciable amount of inulin is converted to levulose or to any substance which can give rise to glucose in the diabetic organism. The burden of proof of its usefulness in the dietary of the diabetic ought now, we believe, to rest with those who claim some unexplained virtue for inulin.

1. Lewis, H. B.: The Value of Inulin as a Foodstuff, THE JOURNAL A. M. A., April 20, 1912, p. 1176.
2. Strauss, H.: Diäthehandlung innerer Krankheiten, Dritte Auflage, Berlin, 1912, p. 193. Albu, A.: Die Ernährung von Zuckerkranken, nebst praktischen Anweisungen für die Diabetesküche, Halle, 1912, p. 43.
3. Lewis, H. B., and Frankel, E. M.: The Influence of Inulin on the Output of Glucose in Phlorhizin Diabetes, Jour. Biol. Chem., 1914, xvii, 365.

Current Comment

LIQUID CHLORIN AND WATER STERILIZATION

"Liquid chlorin" is the name under which liquefied chlorin gas appears in commerce. During the last seven or eight years the manufacture of liquid chlorin has become well established in this country, and the product is said to be displacing bleaching-powder in a number of industries. It is also used in chemical manufacturing industries such as detinning. The gas is generated by the electrolysis of brine and is then dried, compressed and cooled until it liquefies. It is marketed in steel cylinders having a capacity of from 100 to 110 pounds weight. The results obtained by the calcium hypochlorite process in emergency water sterilization have led to experiments with liquid chlorin for the same purpose. Excellent results as to bacterial efficiency have been obtained at Philadelphia and Wilmington, Del. Experimental observations by Jackson at Cleveland and Brooklyn are also favorable. The advantages claimed for the process are economy in cost of installation and operation, simplicity in regulation of the quantity of chlorin applied, and absence of the unpleasant odors and tastes sometimes resulting from the bleaching-powder treatment. Some experimenters are very enthusiastic over the virtues of this new mode of water sterilization,[1] but a wider experience with the practical application of this procedure seems desirable before its general adoption can be confidently urged.

THE TONIC EFFECT OF SYMPATHY WITH OTHERS

Some years ago there appeared in the newspapers an open letter in which a suffering and helpless woman asked aid in securing a law to permit invalids pronounced incurable after a medical consultation to be painlessly put to death.[2] Naturally, the letter attracted attention and reawakened the old question whether or not physicians are ever justified in shortening life. It is of interest, then, to note that the writer of the letter now rejoices at the non-fulfilment of her wish. She has lived to experience how much life may hold even in the face of bodily helplessness and how greatly hope brightens prospects which seem at first so unfavorable. She tells of having received thousands of letters from all over the world containing messages of sympathy and approbation for her daring attempt to secure a modification of present-day laws protective of life. Some of these invalids, she says, have since written her of their cure and of their gladness that conservatism and old-fashioned legislation had intervened between themselves and their impatience. One of these correspondents, who was sure that hope was dead for her and who eagerly desired the "finis" at the end of the chapter, has written of her complete recovery and how much more life now means to her since she has "passed through the shadow of the valley of desolation." This correspondence has proved, as

1. Kienle: Proc. Am. Waterworks Assn., 1913, p. 267.
2. Supplicant for Euthanasia Recovers, Current Comment, THE JOURNAL A. M. A., Feb. 28, 1914, p. 703.

might well be expected, a stimulant and a tonic to the invalid. She feels not only that her contact with others has given them a renewed interest in life, but also that even her mistaken suggestion of a revolutionary change in law has not been without its good effect, since it has drawn together in bonds of deep human sympathy, invalids who felt their helplessness yet were helped by the knowledge of their common lot. It was the touch of nature that makes the whole world kin—and kind. Probably nothing is more stimulating and genuinely tonic to sufferers, especially those with chronic ailments, than the feeling that in spite of their own helplessness they themselves can still be helpful to others. The Shut-in Society in this country has made life more bearable for many persons who are confined to their rooms or their houses. Nothing disturbs a certain class of patients so much as to be constantly in contact with those who are in good health and strength and whom they can scarcely help but envy. To be brought into touch with those for whom they themselves can feel is a precious source of consolation and uplift. Pity is a luxury to be enjoyed, but no human being likes to be pitied or to feel that he is an object of pity. To be conscious of some advantage in one's situation over that of others is of itself an alleviation for many sicknesses.

Medical News

ALABAMA

Hospital Name Changed.—The trustees of the Holy Innocents Hospital, Birmingham, announce the change of the name of the institution to the Children's Hospital of Birmingham, and furthermore that the institution is free for the care of children from infancy to the age of 14. The ward capacity of the institution is twenty-five.

COLORADO

Corner-Stone Laid.—The corner-stone of the Samuel Grabfelder Medical Building of the National Jewish Hospital for Consumptives was laid June 28. Addresses were made by Governor Ammon, Dr. James M. Perkins, the mayor of Denver, and others.

Health Officers Organize.—At a meeting of the health officers of Colorado held at Boulder, July 1, the Colorado Association of City Health Officers was organized. The scope of the work of the association was outlined, and a committee was appointed to arrange for permanent organization.

Personal.—Dr. Caleb W. Pressnal, Trinidad, has sailed for Europe.——Dr. John L. Schwer, Pueblo, who recently underwent an operation at St. Mary's Hospital in that city, is said to be improving.——Dr. Ross E. Wright, Loveland, sustained serious injuries by the overturning of his automobile, July 5.

ILLINOIS

Hospital Notes.—The new Dispensary for Sick Children, Kewanee, made possible by the efforts of the local women's club, was opened July 1 in the Lyle building on North Tremont Street.——The East St. Louis Board of Health has closed the contagious hospital of that city.

Correction.—Dr. E. Vincent Hale, Anna, states that the announcement of his retirement from active practice, which appeared in THE JOURNAL of last week, the information being derived from the Cairo *Bulletin* of July 2, is incorrect, and that he has no intention of retiring from active practice.

Staff Physician Honored.—At the completion of the twenty-fifth year of service of Dr. Otis Johnston on the staff of St. Mary's Hospital, Quincy, the sisters gave a dinner in honor of Dr. Johnston, July 2. A jubilee song was sung and poems in honor of the occasion were read, and many silver gifts were presented to Dr. Johnston.

Personal.—Dr. Whedon W. Mercer, a member of the staff of the Peoria State Hospital, has been appointed assistant superintendent of the Anna State Hospital.——Dr. Arthur L. Hagler, Springfield, who was operated on at St. John's Hospital in that city, recently, is reported to be improving.——Dr. George P. Gill, Rockford, was operated on for mastoiditis at the Wesley Hospital, Chicago, July 8.——Dr. Perry H. Wessel has been reappointed city physician of Moline.——Dr. Edgar H. Little has been appointed postmaster of East St. Louis.

Chicago

Tuberculosis Exhibits in Schools.—The request of the Chicago Tuberculosis Institute that it be allowed to place educational exhibits in several of the social education schools, was granted at the meeting of the school management committee of the board of education, July 17, and the institute was requested to place exhibits in as many of the schools as it deemed profitable.

Koch Society Meeting.—July 16, the Robert Koch Society for the Study of Tuberculosis met under the auspices of the Chicago Tuberculosis Institute at the City Club. The subject discussed was "Tuberculosis of the Bones and Joints: Its Present Status." Dr. Charles M. Jacobs read a paper on "Etiology and Pathology," Dr. John L. Porter, on "Non-Surgical Treatment," Dr. Edward W. Ryerson on "Surgical Treatment." The discussion was opened by Dr. John Ridlon.

Personal.—Dr. Nathan S. Davis, who was operated on at the Presbyterian Hospital for the removal of gall-stones, June 30, has made a good recovery and is convalescing at his home in Lake Forest.——Dr. and Mrs. William Fuller, Dr. John B. Murphy, Dr. and Mrs. George T. Tristram, Dr. Charles Davison, Dr. William L. Abbott, Dr. and Mrs. Jabez D. Hammond and sons, Dr. Truman W. Brophy and Dr. Emilius C. Dudley and daughter have gone abroad.——Dr. Andrew M. Harvey is ill with typhoid fever at the West Suburban Hospital, Oak Park.

INDIANA

Children's Dispensary and Hospital Incorporated.—The Children's Dispensary and Hospital Association of South Bend was incorporated, July 3, with the following directors: Drs. Charles E. Hansel, Roscoe L. Sensenich, Hugh M. Miller, Edwin J. Lent and others.

Free Clinics Resumed.—After an intermission of a month, the free clinics of the Hillside Christian Church, Indianapolis, for the treatment of diseases of the eye, ear, nose and throat, was resumed, July 10. Free clinics for children will be conducted by Dr. Homer W. Cox on Tuesdays and Thursdays from 2 to 4 p. m.

Milk Clinic Opened.—The new pure milk clinic was opened July 9, under the direction of the Indianapolis Children's Aid Association at the College Mission Settlement, Haughville. Clinics are held each Monday and Thursday morning from 8:30 to 9:30, in charge of Dr. Frank McCool.——A new milk station will be opened by the Flanner Guild in Culvert Street, and will be in care of Dr. Harry Conner.

Personal.—Dr. Frank H. Jett, Terre Haute, coroner of Vigo County, is reported to be seriously ill with pneumonia complicating typhoid fever, in London, England.——Dr. John P. Herrington, Logansport, local surgeon of the Pennsylvania System, was awarded a sphygmomanometer for the best essay on surgery at the annual conference of surgeons of the Pennsylvania lines, east and west, held recently in Atlantic City.

KENTUCKY

University Sells Hospital.—The Board of Education of Louisville has purchased the city hospital building at South Sixth Street, from the University of Louisville for $40,000. The building will be remodeled for a graded school for white children.

To Relieve Congestion at State Hospital.—Congestion in the three state hospitals will be temporarily relieved by the construction of a common dining-hall at the Western State Hospital, Hopkinsville. This dining-hall will cost $30,000, but will take the place of twenty-five dining-rooms in the various buildings of the institution, and these will be transformed into sleeping quarters for about two hundred patients. The additional accommodations will permit the transfer of several patients from the Lakeland and Eastern State Hospitals.

MARYLAND

Personal.—Dr. Charles L. Mattfeldt, of Catonsville, has returned to his home from the Baltimore Eye, Ear and Throat Hospital, where he underwent operation.——Drs. Randolph Winslow, Baltimore, and Edwin B. Claybrooke and James T. Johnston, Cumberland, have sailed for Europe.

More Money for Medical School.—In addition to the general fund of $1,500,000 recently given to the Johns Hopkins University Medical School, Baltimore, the General Educational Board is said to have appropriated a fund of $50,000 for the development of the Hunterian Laboratories of the school.

Montevue Asylum Closed.—The State Lunacy Commission has transferred all the insane patients from Montevue Asylum, Frederick county, to state hospitals for the insane, which means that this institution will now be closed. It is the first county asylum in the state to be relieved of the care of the insane, and tends toward the gradual elimination of county asylums.

Health Department Moves.—The Health Department of Baltimore, the State Board of Health and Department of Vital Statistics are now located in the old Polytechnic Building on Portland Street, which has been remodeled for their use. The first and second floors are given over to the offices of Health Commissioner Gorter and his assistants. On the third floor are the State Board of Health and the nurses connected with the department of Vital Statistics, and the chemical, pure food and dairy supply departments are on the fourth floor.

State Health Survey Commenced.—The state and national health authorities began on July 7 the sanitary survey of Maryland. It was begun in Dorchester County. It is proposed to visit and inspect every house, and carry on health propaganda by public meetings, moving pictures and health exhibits, and all other means of emphasizing the importance of sanitation and health. The survey board consists of Dr. John S. Fulton, State Board of Health, Dr. Leslie L. Lumsden, U. S. P. H. S., and Drs. Josiah H. Bowen, Washington, William C. Stone, Ellicott City, Caldwell Woodruff, Baltimore, Alexander M. Stevens, Easton, and Richard B. Norment, Baltimore.

Staff Changes.—Dr. Karl H. Van Norman, for the last two years chief admitting physician of Johns Hopkins Hospital, has been selected as first assistant superintendent of the hospital, to succeed the late Rupert Norton, who died a month ago. Dr. Henry A. Stephenson, resident obstetrician, and Dr. Frank Hinman, assistant resident surgeon, have accepted appointments to the staff of the Leland Stanford Medical School of San Francisco. Dr. Stephenson will be succeeded by Dr. Everett Dudley Plass, who was called to a New York hospital. Dr. Ralph Seem, for the last two years in charge of the dispensary and third assistant to Supt. Winford H. Smith, has been designated as second assistant, succeeding Dr. Van Norman as chief admitting physician.

MINNESOTA

Southern Minnesota Physicians to Meet.—The mid-summer meeting of the Southern Minnesota Medical Association will be held in Winona, August 20 and 21.

Counties Build Sanatorium.—Beltrami, Koochiching and Hubbard Counties are uniting to build a sanatorium for tuberculosis, which will probably be located near Lavina, on Bass Lake.

Tuberculosis Quarantinable.—The State Board of Health July 14 officially declared tuberculosis to be a communicable disease and subject to certain regulations. These regulations include the isolation of tuberculosis patients in a sanatorium or at home, the care of the patients in the early stages of the disease, and the enforcement of quarantine rules.

School of Public Health.—It is proposed to establish a school of public health at the University of Minnesota, and a meeting was held to discuss plans for the school, July 13. The instruction is to be entirely by the present teaching staff, and will include the consideration of the subject from a medical as well as from a modern sanitary engineering standpoint.

Personal.—Dr. William B. Lande, St. Paul, has recovered from his recent severe illness and resumed practice.——Dr. and Mrs. James L. Lynch, Winona, Drs. Olaf J. Hagen and Edward W. Humphrey, Moorhead, have sailed for Europe. ——Drs. Robert I. Hubert, Edward Schons and Charles E. Smith have been appointed medical inspectors of the St. Paul Department of Health.

District Sanatorium Desired.—Lyon, Cottonwood, Nobles, Murray, Pipestone and Lincoln counties sent representatives to Pipestone June 18 to promulgate plans for establishing a district sanatorium for tuberculosis. At a meeting to be held in Tracy, July 21, the matters of site, plans and specifications will be discussed. Of the three remaining counties of the district, Rock and Redwood counties are still undecided, and Jackson county has declined to unite with the organization.

MISSOURI

Personal.—Dr. and Mrs. John D. Pifer, Joplin, have returned from abroad.——Dr. Charles Sandy, of the staff of the Emergency Hospital, Kansas City, was seriously injured, July 9, in a collision between a motor-ambulance and a motor-truck.

St. Louis

Personal.—Dr. and Mrs. Walter Fischel have returned from Europe.——Dr. Albert May has started on an automobile trip to San Francisco.

MONTANA

Personal.—Dr. Charles R. Blake, Butte, has moved to Dillon, where he will be associated in business with Dr. Harry A. Bond.——Dr. Arthur G. Allen, Butte, has been appointed a member of the examining board of the municipal police department.

Health Officers' Meeting.—The annual meeting of the Montana Health Officers' Association was held in Lewistown, July 7; and the following officers were elected: president, Dr. Arter W. Deal, Lewistown; vice-president, Dr. Clyde W. Jump, Bozeman, and secretary, Dr. William F. Cogswell, Helena.

State Medical Society Meeting.—The twenty-sixth annual meeting of the Montana State Medical Association was held in Lewistown, July 8 and 9, under the presidency of Dr. William P. Mills, Missoula. The following officers were elected: president, Dr. James H. Irwin, Great Falls; vice-presidents, Drs. John C. Schapps, Butte; Clyde W. Jump, Bozeman, and Paul L. Greene, Livingston; secretary-treasurer, Dr. Elmer G. Balsam, Billings, and councilors, Drs. Clyde W. Jump, Bozeman; Drura R. Claiburn, Big Timber, and Benjamin C. Brook, Helena. It was decided to hold the next meeting in Bozeman.

NEW YORK

Personal.—Drs. Arthur W. Elting, Howard Van Rensselaer, Herman C. Gordinier, and John A. Sampson have resigned from the faculty of Albany Medical College.——Dr. Frederick W. Sears has been elected temporary president of the Syracuse Advisory Recreation Commission.——Dr. Sherman Voorhees, Elmira, was seriously injured in an automobile accident, July 5, in which Mrs. Voorhees was instantly killed, and their son, Sherman P. Voorhees, painfully injured.

Drug Traffic in Penitentiary.—In a hearing on July 8, in reference to the alleged drug traffic and the extent to which drugs were being used in Sing Sing prison, Ex-Warden John M. Clancy testified that the extent of the drug traffic in the prison is appalling, but he said, furthermore, that the sanitary conditions of the prison are worse and that tuberculosis, pneumonia, and rheumatism are as dangerous menaces as the smuggled drugs. It was brought out that at least forty keepers have been in the habit of assisting in smuggling drugs to the prisoners. Mr. Clancy testified that drugs were smuggled into the prison in almost untold quantities and in ways that were most uncanny. He claimed that many times during the time he held office he had endeavored to get a hearing for the purpose of altering conditions but had been unable to do so. The histories of many of the prisoners show to what a large extent the drug habit has been responsible for crime.

State Health Department Activities.—The State Health Department has just sent out a special bulletin in which the sanitary code established by the Public Health Council of the state is printed in full. The department plans to report each month the current progress along health lines in the cities and towns of the state. The annual and monthly reports of local health departments will be briefly reviewed and health officers are urged to see that the state department receives all their publications for this purpose. Reports of all civic and philanthropic organizations dealing with the public health will also be welcome. It is also urged that the supervisors of the department be kept informed of any happenings of unusual interest such as epidemics and new

developments in administrative and educational work. There have been twelve sanitary inspectors appointed from the list certified by the Civil Service Commission and they have already entered on their duties. These are: Drs. Edward Clark, Buffalo; Frederick W. Sears, Syracuse; Harry H. Crum, Ithaca; John J. Mahoney, Jamestown; Charles S. Prest, Waterford; LeRoy W. Hubbard, Mt. Vernon; John Archibald Smith, Saranac Lake; John A. Conway, Hornell; Charles C. Duryee, Schenectady, and Charles V. Pachin, Dansville. Dr. Samuel D. Hubbard of New York City was also appointed but has resigned.

New York City

Small-Pox Comes to Port.—The steamship *Batavia* from Hamburg, which came to port on July 5, was held in quarantine because one of the steerage passengers was ill with small-pox. Seventy-seven passengers were held at quarantine for observation.

Care for Children with Sick Mothers.—An institution which will care for children whose mothers are ill in hospitals or sanitaria will be opened next month at Far Rockaway under the auspices of the Ladies Auxiliary of Temple Israel. A house has been secured on Hollywood Avenue, which will accommodate fifteen children.

Floating Hospital Begins Season.—The steamer *Helen C. Juilliard*, floating hospital of St. John's Guild, entered its eighteenth year of service, July 6. The steamer plies between New York and Staten Island, and infants who are seriously ill are removed to the Seaside Hospital, Staten Island. About 1,200 children are carried by the boat on each trip.

Vaccination in the Parochial Schools.—With the special appropriation which the Department of Health secured for the purpose, vaccination has been going on in the parochial schools of the city. During the month of May there were 69,354 children vaccinated in these schools. It is stated that only a little over 6 per cent. of the children refused vaccination. The authorities of the parochial schools cooperated in every way to have the children under their care given the same protection against small-pox as is given the children in the public schools.

Another Conservation Program.—The Equitable Life Assurance Society offers from July 1, free physical examinations, chemical tests and health reports to policy holders whose insurance has been in force for three years or longer, by the society's salaried examiners. It is agreed that if any large proportion of the policy holders get the habit of having periodical examinations or health reports, either through the Equitable service or through their own physicians, the average health of the members will be improved and the average length of life will be prolonged.

Personal.—Dr. Oscar Teague of the Cornell University Research Laboratory has been appointed director of the new bacteriologic laboratory at Quarantine.——Among those who have sailed for Europe recently are Dr. Samuel B. Moore Dr. Charles Ogilvy, Dr. and Mrs. Joseph F. Todd, Dr. and Mrs. Moses S. Kakels, Dr. and Mrs. George K. Swinburne, Dr. George M. Swift, Dr. and Mrs. John E. L. Davis, Dr. and Mrs. Charles N. Dowd, Dr. William H. Luckett and Dr. and Mrs. Louis Faugeres Bishop.——Dr. Frederick W. Loughran has been appointed chief medical adviser of the State Insurance Department of Workingmen's Compensation Commission.——Dr. Thomas A. McGoldrick, Brooklyn, has been appointed chief consulting surgeon to the new St. Anthony's Hospital, Woodhaven.——Dr. Herman B. Sheffield has been awarded the Alarenga prize for his essay entitled: "Idiocy and Allied Mental Deficiencies of Early Childhood."

OHIO

May Deport Leper.—The case of Salvatore Paluso, declared to be suffering from leprosy, has been officially referred to the United States Inspector of Immigration, J. A. Fluckey, with a view to his deportation.

Society Honors Departing Member.—A banquet was given in Xenia, July 2, by the Greene County Medical Association in honor of Dr. and Mrs. Samuel S. Wilson, who left the next day for their new home in Ozona, Fla.

Hospital Corps Mustered.—The Third Field Hospital Ohio N. G., was mustered into service at Youngstown, June 30, with an initial personnel of twenty-nine. Major William P. Love has been assigned to command the organization.

Personal.—Dr. Henry M. Osborne, Youngstown, and Dr. and Mrs. Birt Garver and daughter, Lorain, have sailed for Europe.——Dr. Judson A. Hulse, Akron, has obtained permission from the common pleas court to change his name to the original family name, Van der Hulse.

Leprosy in Cleveland.—A case of leprosy has been discovered at the City Hospital, Cleveland. The patient is a man of 28. He has been isolated from the other patients and placed in the contagious ward of the hospital. This is said to be the third case of leprosy discovered in Cleveland.

Tuberculosis Fighters Meet.—The thirteenth annual meeting of the Society for the Prevention of Tuberculosis was held in Columbus, June 30. Dr. Gilbert E. Robbins, Chillicothe, was elected president, and Dr. Chester B. Bliss, Sandusky, a director. The society recommended the following measures for the work of the state: Renewed campaign for the establishment of a state public health day. Cooperation with the State Board of Health, which has taken over the active antituberculosis work in Ohio. Extension of scholarships to trained nurses to fit them for special work in instructive visiting nursing, through training in the antituberculosis work of the larger cities of the state. The inauguration of an active educational campaign against so-called tuberculosis remedies, through which the sick are being exploited. The amendment of the state tuberculosis hospital law to eliminate the county medical examiners for the Mt. Vernon institution and to abolish the $5-a-week charge, which has been found to bar many patients needing treatment. The establishment of a bureau under the State Board of Health to keep in direct touch with the patients in the various state districts and municipal hospitals.

Civil Service Commission Permits Aliens to Take Its Examinations.—The State Civil Service Commission of Ohio has for the first time in its history lifted the bars for applicants who desire lucrative positions under the government of that state. On August 4 a special examination is to be conducted by this commission to secure a list of competent employees to man the newly organized Bureau of Juvenile Research. Hereafter, instead of committing delinquent children directly to an institution, the courts of Ohio will commit them to the Board of Administration. They will be detained in a special department, to be known as the Bureau of Juvenile Research, until their mental and physical condition shall have been determined to a certainty. Then they will be committed to proper institutions for treatment. This advanced method of receiving children, charged with having violated some state law, is so unusual that Ohio is anxious to get the best employees possible for this department, and has therefore issued a call open to any resident of the United States to take part in the special examination to be conducted on August 4. Any one desiring to take this examination should be experts in pathologic and psychologic work. They should address the State Civil Service Commission at Columbus, Ohio, and the necessary blanks will be sent at once. On these blanks the examination will be conducted, and it will not be necessary for the applicant to leave his home to participate in them. Good salaries will be provided for the places by the state of Ohio. Among those wanted are a psychologist, a laboratory worker, diagnostician, field workers and laboratory workers. The competitive examinations ordered are for the following positions: 1. Psychologist: psychologic examination and grading of juvenile commitments to the Ohio Board of Administration. Experience and thesis (one to be appointed). 2. Laboratory worker: experienced in pathologic research. Experience and thesis (one to be appointed). 3. Diagnostician: experience and thesis (one to be appointed). 4. Field workers: experienced in the investigation of heredity and environmental traits, and the collection of family histories and statistics. Experience and thesis (three to be appointed). 5. Laboratory workers: experienced in giving the Binet-Simon and other similar mental tests (two to be appointed). Salaries to be fixed by the Board of Administration. Application blanks may be secured from the State Civil Service Commission, Columbus, Ohio. Questions will be sent to applicants and answers mailed to this office. All final papers must be in the hands of the State Civil Service Commission on or before 5:30 p. m. August 4.

OKLAHOMA

Hospital Opens.—St. Mary's Infirmary, McAlester, was recently opened for the reception of patients. All reputable practitioners have access to the institution.

Disease Prevention Day.—Dr. J. C. Muir, commissioner of health of Oklahoma, is actively engaged in organizing the

state for the observance of disease-prevention day, which is fixed for October 3.

Personal.—Dr. John L. Houseworth, Guthrie, has been appointed local surgeon to the Fort Smith and Western Railroad.——Dr. Kelley D. Gossom, Custer, and Arthur S. Risser, Blackwell, are reported to be convalescent after surgical operations.——Dr. Alva A. West, Guthrie, who was to have sailed for Europe, July 10, sustained a sunstroke June 28, and was taken to the Methodist Hospital, where he is reported to be improving.

PENNSYLVANIA

Off for Europe.—Dr. James F. Saltry, Dr. Arthur H. Bernstein and Dr. Patrick H. Kearney, Scranton; Dr. and Mrs. Charles D. Schaeffer, and Dr. Charles H. Schlesman, Allentown, and Dr. Roger R. Rupp, Coplay, have sailed for Europe.

Hospital Corner-Stone Laid.—The corner-stone of the Brownsville General Hospital was laid July 9, with imposing ceremonies. The hospital will be completed January 1, and will cost $75,000. It will have two surgical and two medical wards.

Employers Must Report Accidents.—John Price Jackson, head of the Department of Labor and Industry of the state, in his report for June issued a warning to all employers that he will prosecute those who neglect to send a report of every accident in their factories to the State Labor Commission.

Common Drinking-Cups Abolished.—On July 16 the Pennsylvania Railroad issued an order requiring all common drinking-cups in its train service to be abolished. This means that on locomotives, where fireman and engineer used the same cup, each in the future will have to have his own and the order will also be effective in the cabooses or wherever the train crews are concerned.

Licenses for Masseurs and Healers Required.—Dr. John M. Baldy, head of the State Bureau of Medical Education and Licensure, announced, July 16, that all persons practicing massage, or allied branches of healing, including medical gymnastics, electrotherapy, etc., would be required to take out licenses to practice in this state and must make application for them before November 1.

Study Industrial Diseases.—Dr. Samuel Scholes, superintendent of the Milton Institute for Industrial Research, and Mr. J. O. Handy, Pittsburgh Testing Laboratory, have been appointed members of the Committee on Occupational Diseases of the American Chemical Society. The work of this committee is to make a thorough investigation of occupational diseases, with especial reference to the prevention of such diseases from a technicologic viewpoint.

Philadelphia

Personal.—Drs. Burton A. Randall and Richard F. Woods have sailed for Europe.——Dr. Robert N. Wilson has been appointed a member of the visiting staff of the Philadelphia General Hospital, vice Dr. William E. Hughes, resigned.

Hospital Buys Land.—The Mt. Sinai Hospital has purchased the dwellings at 438, 440 and 442 Wilder Street, on which it is proposed to enlarge the present hospital buildings. The plot of ground acquired is 42 by 40 feet.

Milk Tax.—The Health Department intends to enforce the new regulations governing the sale of milk to the extent of supervising soda water fountains and liquor saloons and the license fee of $5 that is required by law will be collected from all proprietors who dispense milk.

Woman Fined for Breaking Quarantine.—A woman resident of one of the suburbs of the city was fined $100 and costs by a magistrate for violating provisions of the state health laws by causing a maid suffering from measles to be removed from her home after quarantine had been established.

Carnival of Safety.—The General Carnival Committee of the Carnival of Safety, to be held in this city September 21-29, plans to include a reconstructed Fourth of July exhibit, the purpose of which will be to put in a form readily understood reasons for the discontinuance of all methods of celebrating Independence Day which are inimical to life.

Community House for Mothers Opened.—A three-story building at 1401 South Front Street, to be known as the First Ward Community House for Mothers and Babies was opened July 9, and weekly baby clinics will be held beginning July 16, under the general supervision of Dr. W. F. Newmeyer of the Bureau of Child Hygiene.

To Forbid Sale of Firearms to Boys.—Judge Brown of the municipal court, July 9, gave instructions that all firearms taken from boys in juvenile court are to be tagged, showing the circumstances of the seizure, that they may be presented before the legislature next fall as concrete reasons for the passage of a law against the indiscriminate sale of firearms.

Suit for Housing Money.—On behalf of the new division of housing and sanitation, a new suit to compel councils to make an appropriation for its organization will be brought in the name of the commonwealth. The commission proposes to obtain a writ of mandamus, directed to both select and common councils to compel them to make an appropriation for the payment of the salaries of the employees of the division. This councils have repeatedly refused to do since the creation of the division by the Act of July 22, 1913.

West Philadelphia's Water-Supply to Be Doubled.—The water-supply provided by the Belmont pumping station will be doubled by new equipment for which contracts aggregating nearly $200,000 were let by the director of public works, July 17. Two centrifugal pumps of 20,000,000 gallons daily capacity will be installed to replace two 10,000,000 gallons reciprocal pumps; six vertical water-tube boilers of 500 horsepower each will replace the five in use at present. Other contracts include piping, fans, turbines, small pumps, water-softening tanks, etc.

Campaign against Cigarette Dealers.—A campaign against dealers selling cigarettes and cigarette papers to minors, in violation of a law passed in 1913, was begun in this city July 17, by Judge Brown, of the juvenile court. Summary action will be taken in every case brought before the juvenile court, and the full penalty of the law, which provides for a fine of not less than $100 and not more than $300, will be imposed. On July 13, a woman who kept a cigar store at Germantown Avenue was held under $500 bail for court on the testimony of five small boys, who said she had sold them cigarettes at the rate of three for a cent. It developed that numerous dealers were engaged in this practice.

GENERAL

Southern Surgeons to Meet.—The annual meeting of the Southern Medical Association will be held in Richmond, Va., November 9-11, under the presidency of Dr. Stuart McGuire, Richmond.

Railway Surgeons to Meet.—The eighth annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association will be held in Ashland, Wis., September 9 and 10. On the morning of the first day the president, Dr. John M. Dodd, will give a clinic in St. Joseph's Hospital. A clam-bake is to be given in honor of the Soo physicians by the Badger Clam Bake Club of Ashland.

District Society Meeting.—The annual meeting of the Iowa and Illinois Central District Medical Association was held in Davenport, Iowa, July 9, and the following officers were elected: president, Dr. Frank H. Gardner, Moline, Ill.; vice-president, Dr. Charles S. Young, Geneseo, Ill.; secretary, Dr. Lawrence W. Littig, Davenport, Iowa, (reelected); and treasurer, Dr. Frank H. First, Rock Island, Ill. (reelected).

Prevention of Infant Mortality.—The American Association for the Study and Prevention of Infant Mortality will hold its annual meeting in Boston, November 12-14. The work of the association will be taken up under sections of nursing and social work and vital and social statistics. The first general meeting will be held jointly with the Massachusetts State Conference of Charities.

Congress for Sexual Research.—The first International Congress for Sexual Research will be held in Berlin, October 31-November 2. The congress will consider all questions regarding sexual research under the following sections: biologico-medical section; section on sociology; legal section and section of philosophy, psychology and pedagogics. Sanitätsrats Albert Moll, Berlin W. 15, Kurfürstendamm 45, is chairman of the committee on arrangements.

Tri-State Meeting.—The semi-annual meeting of the Northern Tri-State Medical Association (Michigan, Indiana and Ohio) was held in Lima, Ohio, July 14. The following officers were elected: president, Dr. James A. Duncan, Toledo; vice-president, Dr. John C. Fleming, Elkhart, Ind.; secretary, Dr. George W. Spohn, Elkhart, Ind. (reelected); and treasurer, Dr. Joseph A. Weitz, Montpelier, Ohio (reelected). The next semi-annual meeting will be held in Elkhart, Ind.

Roentgenologists to Meet.—The American Roentgen-Ray Society will hold its fifteenth annual meeting at the Hotel Stadtler, Cleveland, Ohio, September 9-12, under the presidency of Dr. Sidney Lange, Cincinnati. Among those who will be present are Dr. Frederick Dessauer, Frankfort, Germany, who will read a paper on "The Artificial Production of Gamma-Rays," Mr. Reginald Morton, London, England, and Dr. W. S. Barclay, Edinburgh, Scotland. Papers will also be read by Dr. Coolidge, inventor of the Coolidge tube, Shearer and Duanne. The subject of deep therapy and the production of hard rays will be fully discussed.

Mouth Hygiene Experts Meet.—The Mouth Hygiene Association held its annual meeting in Rochester, N. Y., July 11 and 12, and elected the following officers: president, Dr. Harvey W. Wiley, Washington, D. C.; vice-presidents, Drs. William A. Evans, Chicago; Oscar Dowling, New Orleans; William R. Malone, New York City, and Surg-Gen. Rupert Blue, U.S.P.H.S.; and secretary-treasurer, Dr. William G. Ebersole, Cleveland. The association authorized the appointment of a commission to revise the regulations of the society, making it a "corporation not for profit," under the laws of the United States in the District of Columbia and the state of Ohio.

Bequests and Donations.—The following bequests and donations have recently been announced:

Associated Jewish Charities, Chicago, $5,000; Home for Destitute Crippled Children, $1,000; Michael Reese Hospital, $2,000, by the will of Nathan Friend.

Beverly, Mass., Hospital, $5,000, by the will of Miss Sarah Warner Clark.

State Sanatorium for Consumptives, Sabillasville, $1,000, by the will of Mrs. Elizabeth Miller in memory of her son.

O'Conner Sanitarium, San Jose, Cal., $25,000, by the will of Dr. G. W. Seifert.

Hebrew Orphan Asylum, Mount Sinai Hospital, Home for Aged and Infirm Jews, and Young Women's Hebrew Association, equal shares of $81,016, by the will of Constant Mayer.

Massachusetts General Hospital, Boston, $5,000, by the will of Susan C. Dove, Andover.

Boston Floating Hospital, $1,000, by the will of Henry K. Barnes, Boston.

Philadelphia Home for Incurables, $5,000, Children's Seashore Home, Atlantic City, Children's Aid Society, Pennsylvania Branch Shut-In Society, Philadelphia Sanatorium Association, Epileptic Hospital and Colony Farm, Oakburne, Pa., Lying-In Charity and Nurses Training School, Rush Hospital, Philadelphia, Philadelphia Free Hospital for Poor Consumptives; Wills Eye Hospital and Germantown Dispensary, each $2,800 by the will of Mrs. Jane S. Echternach.

The Care of Lepers.—In the Section on Dermatology at the Atlantic City session, of the American Medical Association, papers were read proposing legislation for the establishment of a national leprosarium for the care of lepers in the United States, whose number seems to be increasing. Only three states have made provision for the care of lepers. Attention is called to the work of the Mission for Lepers which is an international, interdenominational institution for the care of lepers in all countries and has connection with the various foreign church missions. This organization is doing most commendable personal work for lepers. It was established thirty-six years ago and has derived its principle support heretofore from Great Britain. The United States has made some contribution but not sufficient to take care of its own lepers and for the support of this work in the American missions abroad, of which there are twenty-seven stations which care for lepers. An instance of the personal nature of the work is the case of an American boy who, while in the Navy, apparently contracted leprosy from the operation of tattooing while on an oriental trip. He was sent to the baths in Japan by a brother who subsequently died, and the boy was sought out and became a charge of Miss Ridell's Hospital for Lepers at Kumamoto, Japan, where there are two American men and one American woman being cared for. Cases like these are sought out by members of this leper mission wherever they may be, all of which, of course, entails considerable expense, and an appeal is made for funds for the support of this deserving work. William Danner, 105 Raymond Street, Cambridge, Mass., is the secretary of the United States committee, and Miss Bertha G. Johnson, 816 West Fifty-First Street, Chicago, is field secretary for the United States.

Rockefeller's Institute Changes.—The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following appointments and promotions: Dr. Hideyo Noguchi, hitherto an Associate Member in the Department of Pathology and Bacteriology, has been made a Member of the Institute. Dr. Alfred E. Cohn, hitherto an Associate in Medicine, has been made an Associate Member for the term of three years. Dr. Wade H. Brown, hitherto an Associate in the Department of Pathology and Bacteriology, has been made an Associate Member for the term of three years. The following Assistants have been made Associates: Harold Lindsay Amoss, M.D. (Pathology and Bacteriology); Arthur William Mickle Ellis, M.D. (Medicine); Thomas Stotesbury Githens, M.D. (Physiology and Pharmacology); Israel Simon Kleiner, M.D. (Physiology and Pharmacology); Alphonse Raymond Dochez, M.D. (Medicine); Dr. Dochez has also been appointed Resident Physician in the Hospital of the Rockefeller Institute to succeed Dr. Swift. The following Fellows have been made Assistants: Frederick Lamont Gates, M.D. (Physiology and Pharmacology); Louise Pearce, M.D. (Pathology and Bacteriology). The following new appointments are announced: Chester Harmon Allen, M.S., Fellow in Chemistry; Alan M. Chesney, M.D., Assistant Resident Physician and Assistant in Medicine; Harold Kniest Faber, M.D., Fellow in Pathology; Ross Alexander Jamieson, M.D., Assistant Resident Physician and Assistant in Medicine; Benjamin Schönbrun Kline, M.D., Fellow in Physiology and Pharmacology; John Jamieson Morton, Jr., M.D., Fellow in Pathology; James Kuhn, Fellow in Chemistry; Joseph Richard Turner, M.D., Fellow in Pathology.——Dr. Paul Franklin Clark, formerly Associate in Pathology and Bacteriology, has been appointed Assistant Professor of Bacteriology in the University of Wisconsin.——Dr. Homer F. Swift, formerly Resident Physician in the Hospital of the Rockefeller Institute, and Associate in Medicine, has been appointed Associate Professor of Medicine at the College of Physicians and Surgeons, Columbia University, and Associate Attending Physician, Presbyterian Hospital.

The Plague Situation—During the past week, Passed Assistant Surgeon R. A. Kearny, Assistant Surgeon Francis A. Carmelia and Acting Assistant Surgeon Mark D. Holds have been added to the plague eradicative staff. From July 12 to 18, 6,307 rats were trapped, and 6,863 rodents were examined. Sixteen suspicious rats were found, of whom six have already proved positive. During the week, three human plague cases have been discovered, one of whom, that of Elizabeth Domingo, has already been mentioned. The sixth case was that of Helen Soell, a white female, aged 10, residing at 522 Camp Street, who sickened July 16, with a right femoral bubo. Plague was diagnosed two days later, the patient was removed to the Isolation Hospital, and Yersin's serum was administered. The seventh case was discovered on July 19. The patient was Philomene Glation, a colored female, 15 years of age, residing at 1131 St. Philip's Street. This infection, like the sixth case, has been traced to the original and only foci, and the patient has been removed to the Emergency Hospital. Of the seven patients, three have died, two are convalescent and the last two are very ill. Elizabeth Domingo, the fifth case, received the serum in large doses, and is said to be in good condition. The plague rodents were found at 1904 Magazine Street, Burgundy Street, 529 Religious Street, 525 South Peters Street and 434 South Rampart Street. A complete inspection of all outgoing freight for overland and over-sea has been organized, and outgoing quarantine of ships still continues. During the week ninety-five bodies were inspected, and in three cases special necropsies were made. Special market inspectors have been appointed for the French, Poydras, Dryades and Magazine Markets. The bacteriologic department of the State Board of Health, under the direction of Dr. William H. Seemann, and his associate, Dr. Charles C. Bass, has manufactured a satisfactory supply of anti-plague serum, some of which was given on July 18, to Dr. Oscar Dowling, president of the State Board of Health, and to employees. While it has not been made compulsory, the use of serum is encouraged. No charge is made for its administration. The clean-up campaign, under the direction of the United States Public Health Service, working in cooperation with the New Orleans Board of Health, and the Louisiana State Board of Health, is being carried on vigorously, and before long it is expected that New Orleans will be the southern sanitary seaport city free of rats. The campaign of publicity and education is being actively continued. In addition to the meetings previously reported, meetings have been held at the First Christian Church, Real Estate Board, Louisiana Sugar and Rice Exchange, Mother's and Parent's Club, Association of Commerce, Seventh Ward Civic League, Dryades Church, Contractors' and Dealers' Exchange, Pan-American Medical Association, and with the Citizens' Health Committee. These meetings were addressed by Asst. Surg-Gen. William Colby Rucker, U.S.P.H.S., and other officers

of the Service stationed in New Orleans. Many of the lectures were illustrated by stereopticon views. The Citizens' Health Committee has appointed a leader in each ward, to organize a committee to have general charge of the clean-up campaign. The women of New Orleans have formed volunteer committees on hotels, restaurants, markets and publicity and education, and these committees have begun their work with most stimulating effect. The city council has under consideration the ordinances previously mentioned, and it seems probable that they will pass. Many persons have begun rat-proofing, and there is already a marked improvement in the sanitary condition of the city.

In order that the public may be kept fully informed as to the plague situation in New Orleans, postal-card notices are sent out daily by the president of the State Board of Health, Dr. Oscar Dowling, advising health officers throughout the state as to progress of old and the occurrence of new cases. Circular letters are also sent out giving more complete information in regard to the plague situation and urging the cooperation of all officials and citizens in cleaning up and rat-proofing their cities. These letters are addressed to parish and municipal health officers and to the mayors of cities and towns. Accompanying these letters is a bulletin containing a schedule of measures to be carried out on a clean-up day as follows: Begin with destruction of all trash or débris. Give particular care to stables, chicken coops, closets and corners used for piles of rubbish. Fill in rat holes with brick, stones or concrete. Tear up plank floors of stables, etc. Rat proof, if possible, barns, stables, etc., with tin, galvanized iron or concrete. Barrels, boxes, bins and receptacles for storing food or other materials should be put on pillars, 2 feet above ground. Manure should be kept in rat and fly proof bins. Provide metal garbage cans with tight covers. If there is no daily scavenger and garbage service, ask the town authorities to provide it. Ask that garbage be collected daily. Help the garbage man by wrapping garbage and placing it conveniently at the proper hour. Don't allow garbage or other refuse to be thrown on vacant lots around your premises. Watch and report, for your own protection, insanitary conditions in your neighborhood. Tell your neighbors to do the same. Keeping premises clean is a question of daily effort. Help the health officers to help you. Your duty: Obey the sanitary regulations. Trap rats, dip in kerosene to kill fleas. Protect all foodstuffs and garbage from rats. Make rat proof all buildings which furnish rat-harboring places. Destroy breeding places of flies and mosquitoes. Keep your premises clean. Cut and remove weeds.

FOREIGN

Death-Rate of Manila.—Dr. Victor G. Heiser reports that in March the death-rate among the residents of the city of Manila was 18.97 per thousand, which is the lowest rate reached since the American occupancy, and is probably much lower than any previous rate during the past century.

Health of Government Employees in the Philippines.—Dr. Victor G. Heiser, U.S.P.H.S., Director of Health of the Philippine Islands, reports that during the quarter ended March 31, 1914, the total number of employees of the Philippine government was 9,318, of whom 2,312 were Americans and 7,006 Filipinos, of which there were two deaths among the Americans and ten deaths among Filipinos, the respective death-rate being: American 3.51, and Filipino 5.79.

Souvenir to Venerable Practitioner.—The medical profession of Cuba recently united in tendering a banquet and presenting a souvenir plaque to Dr. Juan B. de Landeta of Havana, on the completion of his fiftieth year of medical practice. The plaque represents an open book with appropriate inscription and decorations. He obtained his medical degree and served as intern in Paris.——The degree of doctor of sciences, honoris causa, has recently been bestowed on Dr. Aristides Agramonte of Havana, by Columbia University, New York, for his works on tropical diseases.

Monument to Carrion.—Daniel A. Carrion, a medical student in Lima, Peru, inoculated himself in 1885 with blood from a verruga tumor in an effort to throw light on the nature of the disease, and he died from it in less than two months. The sixth Pan-American Congress held at Lima last year started a fund for a monument to this young martyr to science, and subscriptions are now being received. The Academia de Medicina of Venezuela recently forwarded over $125 as its contribution. The fund is in charge of the dean of the medical faculty, Prof. E. Odriozola, Lima, Peru. Carrion's work was described recently in THE JOURNAL, Nov. 8 1913, p. 1713.

Banquet Novy.—The Asociacion Medica de Puerto Rico tendered a reception and banquet to Prof. F. G. Novy of the University of Michigan, on his arrival at San Juan July 15, Drs. W. A. Glines and J. S. Belaval being in charge of the affair. This association was not officially represented at the annual meeting of the American Medical Association as no delegates are admitted unless the society has been affiliated with the Association for two years at least, and consequently, as the organ of the Porto Rico Association remarks, for this year they were orphans. At the next meeting they will have an official representation. The son of the editor of the *Boletin* de la Asociacion Medica has just been graduated from the Naval Academy at Annapolis.

CANADA

University News.—Several citizens of Toronto have agreed to contribute various sums amounting to $15,000 for five years to enable the University of Toronto to engage in research work.

Personal.—Dr. Charles T. Ballantyne, Montreal, is spending some months in Glasgow.——Dr. Herbert A. Bruce is returning to Toronto in August after a trip abroad.——Drs. A. Orr Hastings and C. E. Cooper Cole, Toronto, have been in Britain for several months.

Conservation Commission to have Charge of Public Health.—Instead of having or inaugurating a department of health or a national board of health for Canada, it has been definitely decided to have the Canadian Conservation Commission look after all health matters in the Dominion of Canada. On August 1 the first number of a bulletin will be issued to doctors, teachers and others interested in public health work, and will, thereafter, continue to be issued each month. Of 100,000 deaths in Canada last year, it is stated that at least 40,000 were caused by diseases that could have been prevented.

Prevention of Tuberculosis.—At the annual convention of the Canadian Association for the Prevention of Tuberculosis in Halifax July 13, strong pleas for federal governmental aid were made to assist in the campaign against tuberculosis in Canada. The welfare of the child is the most important phase of the warfare. The president's address pointed out that year by year the deaths from tuberculosis in Canada were decreasing, and much praise was given the board of health of Ontario for its work in bringing its exhibits before the people. Lieutenant-Colonel Burland, Montreal, was elected president for the ensuing year. Dr. George D. Porter, Toronto, was reelected secretary.

Hospital News.—For the tuberculosis hospital to be built in Quebec City the sum of nearly $5,000 was recently collected by means of a flower sale.——The Winnipeg City Council has made a grant of $15,590 to its General Hospital.——The city of Calgary has granted to its General Hospital $14,030 for current expenses.——The Hugh Waddell Memorial Hospital was formally opened at Canora, Sask., on June 18. Mr. C. R. Graham of Winnipeg contributed the site and Mrs. Waddell of Regina the hospital. It has a capacity of thirty-eight beds.——At New Westminister, B. C., the New Royal Columbian Hospital was formally opened, May 29.——A new wing to cost about $6,000 is to be added to the Chilliwack, B. C., Hospital.——The Ontario government approved the hospital bill of the Western Hospital, Toronto. It was only opposed by two members of the staff. The bill confers on the governors full power to manage the hospital as they deem best; and in future the board will be composed entirely of laymen. Hereafter the hospital staff will have no voice in the management of its affairs, acting merely in a consulting capacity. ——Dr. Bain, a graduate of the Western University, London, Ont., has been appointed house surgeon in the Brantford Hospital.——The service of oto-laryngology, Toronto General Hospital, has a vacancy for a house surgeon for eighteen months. Applications should be addressed to Dr. David J. G. Wishart, chief of the service.

LONDON LETTER

LONDON, July 9, 1914.

The Royal Commission on Venereal Diseases

At a recent meeting, evidence was given by Blaschko, honorary secretary of the German Society for Combating Venereal Diseases. He thought that while the figures for venereal diseases in the British army were much higher than in the German, these diseases were probably more prevalent in Germany. This he attributes to better conditions of

life in England; at any rate, temptation was far greater in German than in English towns of the same size. The society which he represented was constituted in 1902. Its main objects were: (1) enlightenment of the public on the ravages of venereal diseases; (2) the scientific discussion of means for combating them and (3) keeping in touch with legislative and administrative bodies and proposing reforms. The committee represented all classes—educationists, insurance companies, physicians, lawyers, public officials, merchants, members of parliament and well-known women. There were branches of the society in nearly all large German towns, and through these the principal part of the work was done. These branches organized public meetings. The society had a large number of wax figures, drawings and lantern-slides which were lent for exhibition. Representations of Brieux's drama, "Les Avariés," had also been organized. In Berlin alone it had been performed more than a hundred times at seven theaters. The society had taken much pains to introduce better sexual legislation at home and in school, but there were many difficulties and prejudices to be surmounted. It had thoroughly changed public opinion on venereal diseases. The whole press and the general public were in sympathy with the movement.

At the last meeting of the Royal Commission on Venereal Diseases, evidence was given by Dr. J. J. Pringle, physician to the skin department of the Middlesex Hospital. He stated that of 36,151 cases of skin disease at the hospital during the last twenty-five years, 1853, or rather over 5 per cent., presented indubitable evidence of syphilis. This figure did not represent the number of patients who had attended the hospital for syphilitic manifestations, but only those who had been referred to the special department as suffering from some affection of the skin. Of these nearly 24 per cent. were foreigners. Dr. Pringle could not see his way to supporting or advocating any measure of compulsory notification of venereal diseases. The medical profession was, he thought, practically unanimously opposed to it, and even if made confidential, its effects on the public would be merely to drive them to seek treatment from unqualified persons. His experience, both in hospital and private practice, convinced him that much of the syphilis existent in England was of foreign importation. A considerable proportion of prostitutes left their own countries because they were unable to ply their trade there and spread disease in this country.

The Family Encyclopaedia of Medicine

The extraordinary circumstances connected with the publication of the Family Encyclopaedia of Medicine have been commented on in a previous letter as well as in an editorial in THE JOURNAL (March 2, 1914, p. 1407 and 1414). It may be remembered that this book was issued to the public as representing the views of the most distinguished men in the profession whose names and qualifications were blazoned in the lay press, and even the aid of "sandwich men" who promenaded the West End were used to advertise the project. Indeed, so eminent were the physicians that a cynic said that their disappointment on finding their names brought before the public in this blatant and unprecedented manner was nothing to the disappointment of others who found they had not been included in such a distinguished company! As already stated, the use of their names was unauthorized. They had merely consented to correct the proofs at the request of the physician who edited the work. His explanation was that the publishers in an excess of zeal published the names while he was ill and away from London. He has not, however, given any explanation as to why he communicated a full list of the names and qualifications and appointments of the distinguished men, who in confidence and as a personal favor consented to help him. Some further revelations throw a sinister light on the transaction. Not only was an unauthorized use made of their names, but they were not even told the nature of the work which was being produced. Thus in a letter evoked by strictures in one of the medical journals, Sir Lauder Brunton states that he was requested by the editor to correct some proofs for a work on alcoholism on which this young man, a student at St. Bartholomew's Hospital (to which Sir Lauder is attached), was engaged. Not a word was said about the use to which this production would be put. Under similar circumstances the professor of medicine at one of the leading universities, a writer of world-wide fame, was induced to correct an article on blood-pressure. In another case an equally distinguished professor and well-known teacher on both sides of the Atlantic had paid no attention to the request for help. Nevertheless his name was duly published on the title-page. The first intimation which he had of being concerned in the work was a letter from the Royal College of Physicians inviting him to explain the circumstance.

Syphilis in New Zealand and the South Sea Islands

An important report on this subject has been presented to the Australasian Medical Conference. The reports from 301 physicians show 1,941 fresh infections in the last two years. It is calculated that if all the physicians in the Dominion had replied this number would have been doubled. Two hundred cases of general paralysis have been treated in the New Zealand mental hospitals in a period of ten years. Physicians doing eye work are very insistent on the prevalence of the disease, especially the congenital form. The committee who compiled the report is of opinion that in order to act in unison with the royal commission at present sitting in London, similar commissions should take evidence throughout New Zealand and Australia. They make the following recommendations: 1. Syphilis should be declared a notifiable disease; notification should be discretionary; and the chief health officer should be the only person to whom notification is made. 2. Provision should be made through hospital boards to establish laboratories in the four centers where not already existent for the diagnosis of the disease. 3. Free treatment in the public hospitals and dispensaries should be provided. 4. Steps should be taken to educate the mercantile marine as to the dangers of the disease and provision should be made for preventive treatment on the intercolonial service. 5. Legislation should be enacted against the treatment of the disease by unqualified persons. It is considered that the monetary cost of eradicating the disease would not be very great; in fact, the expenditure would be small in comparison with that resulting from the present wholesale infection of the populace. No form of public expenditure could be so truly described as national and reproductive. If the steps indicated be taken, the results would be diminution of mortality, diminution of insanity, and diminution of expenditure on hospitals and asylums.

PARIS LETTER

PARIS, July 3, 1914.

National Conference on Social Hygiene

The meeting of the Alliance d'hygiène sociale, which just took place in Lyons, devoted itself particularly to deciding the rôle which dispensaries should play in the battle against the development of social maladies, which are due principally to alcoholism and insanitary dwellings. It was recognized that, in this battle, the old methods of individual charity were not sufficient: it is necessary to come to the aid of the family. The dispensary, which does a certain amount of work in the home, can be the most appropriate means of this new "sanitary strategy," because it allows the classification of cases and makes possible the immediate and certain sanitation of stricken or threatened neighborhoods. Nevertheless there is difference of opinion in regard to the best type of dispensary. Each one defends the system with which he is most familiar. The dispensaries in France differ decidedly in their organization and work. From an investigation made by Dr. Filassier, chief statistician of Paris, into the forty-six antituberculosis dispensaries which exist in fifteen departments, it appears that all the dispensaries follow a common idea while employing different methods: one gives consultations in winter and organizes vacation colonies or instals a house for open-air treatment for summer; another distributes clothing; another dispenses food; another subsidizes works for infant welfare. It was nevertheless recognized that the dispensary of the "Calmette variety" is that which should be multiplied with the provisos that the different requirements of different places must be taken into consideration, and that an urban and a rural type are necessary. In any case, the dispensary should not supplant the practitioner in undertaking treatment.

It is especially important to find resources for the dispensaries. The majority of those existing, being private, have resources which are entirely insufficient: assessments, benefit fêtes, etc. The principle which was put into practice in Lyons by Arloing and Courmont seems capable of giving better results. This principle is to have an arrangement with the municipality and the bureau of charity, to prove that the tuberculous make a considerable proportion of all the invalids who are aided, and to ask that a part of the allowance used for the care of the sick and indigent be set

aside for the tuberculous sick and indigent; in other words, not to add to the budget for relief, but to subtract certain sums which shall be used for the relief of tuberculous persons in their homes; in a word, to divide the municipal budget into general expenses and special expenses for the tuberculous. With a budget of 35,000 francs ($7,000)—of which 17,000 francs ($3,400) is furnished by the city and 10,000 francs ($2,000) by the bureau of charities—the dispensary at Lyons gave astonishing results: before its establishment, the mortality from tuberculosis in Lyons was more than 35.4 per ten thousand; but in 1911 it was not more than 26.1, or a gain of 9.3, a diminution of more than a fourth.

Personal

At its session, June 30, the Académie de médecine elected Dr. Marfan, professor of therapeutics at the Faculté de médecine de Paris, as an honorary member. Bernard-Antoine Marfan is best known as a specialist in diseases of children. He has written on the digestive disturbances of infants, on artificial feeding, and on the relation between rachitis and infections, notably syphilitic and tuberculous infections.

Honor to Dr. Koeberlé

An international committee has just been formed to commemorate, by a bronze medallion to be placed on the walls of the city hospital of Strassburg, the fiftieth anniversary of the first successful ovariotomy, in Europe, which was performed by Dr. Koeberlé (THE JOURNAL, Sept. 7, 1912, p. 814).

Child Welfare at the Museum of Hygiene

At the reunion which just took place under the presidency of Dr. Roux, director of the Institute Pasteur, the commission on improvements of the Musée d'hygiène approved the propositions which were submitted to them by the guardian of the museum concerning the opening of a hall reserved for child culture. A series of comprehensive pictures will instruct the mothers of families in the bringing up of the infant.

Infant Mortality and Alcoholism

M. Paul Juillerat, member of the Conseil d'hygiène et de salubrité of the department of the Seine, and Dr. A. Filassier, chief statistician of the city of Paris, have just published, in the *Revue philanthropique*, the result of researches which they have made into the causes of infant mortality in Paris. This article shows, concisely, the ravages of alcoholism. In the period of ten years from 1903 to 1912 inclusive, of 97,885 children who died, 53,619, almost half, were children under 11 months old. Congenital debility is responsible for 12,342 of these deaths. However difficult it may be in the present state of statistics to place the cause with absolute certainty in these matters, Juillerat and Filassier do not hesitate to say that this enormous proportion must be attributed to alcoholism in the parents of the congenitally debilitated children. Dr. Jacquet's statistics are particularly instructive in this respect. In the investigation which he made from May 1, 1912, to May 1, 1913, at the hôpital Saint-Antoine, he divided the 396 patients whom he examined into three classes, with a total of 879 children: alcoholism in moderation (those who drink a liter of wine, alcohol or, rarely, aperients); decided alcoholism (those who drink habitually from 1.5 to 2 liters of wine, alcohol or absinthes rather frequently), and very decided alcoholism (those who drink habitually 2 liters of wine or more, aperients, alcohol, occasional repeated absinthes).

MORTALITY AMONG THE CHILDREN OF ALCOHOLICS

Alcoholic Consumption	Births	Deaths	Per Cent.
Moderate 141	305	83	18.78
Decided 108	248	115	26.01
Very decided 147	326	244	55.47
396	879	442	....

Of these 442 dead children, 272 succumbed in early infancy. Thus, the children of these 396 patients, all addicted to alcohol to a greater or less degree, gave a round mortality of 50.28 per cent.

Juillerat and Filassier then show that in different domains, medical and social foresight have noticeably diminished the infant mortality. This is the case with diphtheria, pulmonary tuberculosis, tuberculous meningitis, syphilis, diarrhea, etc. In contrast to this, so far as congenital debility is concerned —which furnishes so considerable a contingent to this mournful record—there has been almost no amelioration.

BERLIN LETTER

BERLIN, July 4, 1914.

Personal

Gärtner, director of the Hygienic Institute at Jena, and v. Hippel, director of the eye clinic at Göttingen, resigned their positions at the end of the summer semester. Hippel is to be succeeded by his son, v. Hippel of Halle.

October 1, Sander and Moeli also resign their positions as directors of the Berlin insane asylums at Dalldorf and Herzberg on account of age. Both are authorities in psychiatry and have done very good service both in scientific advancement of psychiatry and in the organization of the care for the insane. Moeli was also for many years a member of the Prussian government board for insanity.

Annual Meeting of the Organized Profession in Germany

The German Aerzte-Verein and the Leipsic League held their meeting for this year in Munich, June 25-27. Altogether about 26,000 physicians were represented by delegates, amounting to about three-fourths of the physicians of Germany.

In the meeting of the Leipsic League, the chief interest was felt in the report of the president, Hartmann of Leipsic, on the so-called Berlin agreement, that is, the contract which was made last December, under the auspices of the government, between the Leipsic League and the insurance societies. Hartmann took the pains to answer the criticisms which had been made by a number of physicians in regard to the result of the contract. He emphasized the important fact that, in the long run a profession, like that of medicine, is not adapted for battle and that an organization which is made only for the sake of strife has no justification for existence. I will omit the details of his report and the discussion as the questions involved have not come up in America.

Hartmann admitted that not all of the demands of the German profession had been secured in the conclusion of peace, but in his opinion, the essential end had been reached.

GRATUITOUS MEDICAL SERVICES

Aside from the address of Hartmann, Lennhoff of Berlin discussed the question of the extent to which physicians should render free service in so-called philanthropic undertakings. In the previous year, the proposal was made by a Leipsic society to limit considerably gratuitous medical service but this proposal met with marked opposition from many physicians' societies and particularly from the public. On the basis of his extensive collection of data, Lennhoff proposed the following conclusions which were also approved by the board of the German Aerzte-Vereins-Bund and were adopted by the meeting by an almost unanimous vote:

1. Free medical service for charity is an honorable duty of the German medical profession but it needs to be protected against abuse. 2. The fact that an undertaking is designated as "philanthropic" (*gemeinnützig*) does not in itself necessitate gratuitous medical service. 3. A general prerequisite for this is that the object of the undertaking does not fall in the sphere of official duty (*nicht in den Bereich behördlicher Leistungen*) and that the undertaking itself is carried on without gain or only a slight one. 4. In individual cases, the gratuitous service should depend on the peculiarity of the medical service. 5. A special service requiring no pay may be assumed in the instruction of societies of voluntary nurses in war and in health colonies and assistants of the Red Cross. 6. Wherever physicians furnish free service for instruction a written statement should be obtained from the bureau which gives the commission and from the persons to be instructed that this shall not involve any kind of medical service.

7. All questions as to whether medical service should be rendered free for a philanthropic undertaking, should be referred to the local organization of physicians. An appeal can be made from the decision of this body to the business committee of the German Aerzte-Vereins-Bund.

ANTIQUACKERY CAMPAIGN

Another important resolution of the Aerzte-Tag was that the campaign against quacks, whose number is continually increasing in Germany, should be carried on with increased vigor. For this purpose the commission appointed by the Aerzte-Vereins-Bund is to be enlarged and to be provided with larger funds. In order to secure the latter, the fee from each member of the Aerzte-Vereins-Bund was raised 1 mark. An appropriation of $6,250 (25,000 marks) was made for the commission. Finally the question of the improvement of the midwife system was thoroughly discussed.

Marriages

BENJAMIN MERRILL RICKETTS, M.D., Cincinnati, to Mrs. Bertha W. Davidson of St. Paul, Minn., at Cincinnati, June 17.

EDWARD MAPLES STEGER, M.D., Winnebago, Wis., to Miss Agnes Johnson of Lansing, Mich., at Oshkosh, Wis., July 6.

PAUL HENRY ANTHONY, M.D., Morris, Ill., to Miss Mary Gwendolyn Fitzgerald of Rogers Park, Chicago, June 30.

LOUIS CLIFTON KUYRKENDALL, M.D., McAlester, Okla., to Miss Ione Williamson of Durant, Okla., July 1.

ARTHUR E. WADE, M.D., Lexington, Neb., to Miss Clara Esther Danielson of Tacoma, Wash., June 16.

HAROLD LE ROY AVERY, M.D., Primghar, Ia., to Miss Lydia Fenner of Independence, Ia., June 30.

AXEL EMANUEL HEDBACK, M.D., to Miss Gladys Margaret Webb, both of Minneapolis, July 2.

LEONARD GEORGE ROWNTREE, M.D., to Miss Katherine Marie Campbell, both of Baltimore, July 9.

EARL HOBART MCRAE, M.D., New York City, to Miss Helen Ray Kitchen of Easton, Pa., July 6.

Deaths

George Whitten Magee, M.D. Western Pennsylvania Medical College, Pittsburgh, 1889; a Fellow of the American Medical Association; for two terms a member of the Pennsylvania Legislature; for twelve years a member of the school board of Oil City, Pa., and for three terms its President; a member of the Board of Directors of the State Institute for the Feeble-Minded, Polk, Pa.; a member of the Medical Staff of Oil City Hospital; died suddenly at his home in Oil City, July 3, from heart disease, aged 49.

Rufus C. Webb, M.D. Vanderbilt University, Nashville, Tenn., 1883; for twelve years Coroner of Acadia Parish, La.; president of the police jury of the parish; for twenty years a member of the common council of Rayne; formerly a member of both houses of the legislature; president of the Rayne Board of Health and director of the Commercial Bank of Rayne and the Commercial Bank of Church Point, La.; died in the Touro Infirmary, New Orleans, July 5, from nephritis, aged 52.

Carl Matthey, M.D. University of Zurich, Switzerland, 1880; a member of the Iowa State Medical Society; for more than thirty years a practitioner of Davenport, Ia.; a member of the Staff of St. Luke's and Mercy hospitals, Davenport; for six years a member of the Davenport School Board; died at his home, July 8, from embolism, aged 61.

Sumner Ferdinand Quimby, M.D. New York University, New York City, 1881; a Fellow of the American Medical Association and a member of the staff of the Addison Gilbert Hospital, Gloucester, Mass.; medical examiner for the Cape Ann district for more than thirty years; died at his home in Gloucester, July 10, from cerebral hemorrhage, aged 62.

George Barr Scholl, M.D. Johns Hopkins University, Baltimore, Md., 1902; a Fellow of the American Medical Association and professor of pathology, bacteriology and clinical microscopy in Baltimore Medical College; who was taken ill while visiting at Drum Point, Md.; died on a steamboat on Chesapeake Bay, July 9, from spinal meningitis, aged 39.

Charles Bigelow Braman, M.D. University of Buffalo, N. Y., 1898; a member of the Medical Society of the State of New York; formerly a practitioner of Rochester, N. Y., but for the last ten years in charge of the pharmacy of the Clifton Springs Sanatorium; died at his home in Clifton Springs, July 4, aged 53.

George Harvey Lee, M.D. Bennett Medical College, Chicago, 1883; of Kankakee, Ill.; a member of the Illinois State Medical Society; president of the Kankakee County Medical Society; died in the Emergency Hospital in Kankakee, July 8, from septicemia, due to a splinter wound of the finger, aged 54.

Edmund Quandt, M.D. Detroit, Mich., College of Medicine, 1902; for four years a city physician of Detroit and for the last two years county physician of Wayne County; died at his home in Detroit, July 5, from tuberculosis; aged 34.

Merrill L. Eidson, M.D. Missouri Medical College, St. Louis, 1885; formerly a practitioner of Beeville, Texas; but for the last five years a resident of San Antonio, Texas; died at his home in San Antonio, July 2, from the effects of skull fracture received in a fall the day before, aged 54.

Samuel Claggett, M.D. University of Maryland, Baltimore, 1898; a Fellow of the American Medical Association; local surgeon at Petersville, Md., for the Baltimore and Ohio System; died in the Maryland University Hospital, Baltimore, July 9, from acute disease of the kidney, aged 41.

George W. Seifert, M.D. Jefferson Medical College, 1883; a member of the Medical Society of the State of California; a prominent and wealthy practitioner of San Jose, Cal.; died in the Palace Hotel, San Francisco, July 2, from acute dilatation of the heart, aged 54.

William H. Willis, M.D. Missouri Medical College, St. Louis, 1881; a Fellow of the American Medical Association; a member of the staff of the Proctor Hospital, Peoria, Ill.; died suddenly at the base-ball park in that city, July 4, from angina pectoris, aged 54.

Henry W. Grauel, M.D. Eclectic Medical Institute, Cincinnati, 1875; of Painsville, Ohio; a member of the Ohio State Medical Association; died at the summer cottage of his son at Linden Beach, Ohio, July 3, from heart disease, aged 66.

Robert T. Miller, M.D. Washington University, St. Louis, 1850; said to have been the first practitioner of Sedalia, Mo., and once mayor of that city; died at the home of his daughter in Jefferson City, Mo., June 11, aged 86.

John Andrew Lee, M.D. Vanderbilt University, Nashville, Tenn., 1887; of Pine Hill, Ala.; a member of the Medical Association of the State of Alabama; died in a hospital in Birmingham, May 29, aged 50.

Dean Samuel Ellis, M.D. Jefferson Medical College, 1883; a Fellow of the American Medical Association; for thirty years a practitioner of Worcester, Mass.; died at his home in that city, June 30, aged 58.

Milton Ira Beeman, M.D. University of Toronto, Ont., 1873; for some time major of the Forty-Seventh Battalion; died at his home in Newburg, Ont., May 10, from cerebral hemorrhage, aged 62.

Milton Isaac Brosius, M.D. Cincinnati Medical College, about 1847; one of the oldest practitioners of Seneca County, Ohio; died at his home near Tiffin, June 9, from senile debility, aged 90.

Barnard H. Gallegher, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1891; a member of the Arkansas Medical Society; died at his home in Pine Bluff, Ark., June 27, aged 51.

Napoleon B. Morrison, M.D. Jefferson Medical College, 1857; a surgeon in the Federal service during the Civil War; died at his home in Wilmington, Del., June 26, aged 80.

Scy W. Ewell, M.D. Kentucky School of Medicine, Louisville, 1882; for many years a practitioner of Bogard, Mo.; died at his home in Carrollton, Mo., June 25, aged 58.

Frederick William Denkewalter, M.D. Rush Medical College, 1874; was found dead in his sanitarium in Spencer, Ind., June 28, from valvular heart disease, aged 71.

Walter E. Truax, (license, Minn., 1883, and California) formerly a practitioner of Breckenridge, Minn., died at his home in East San Diego, Cal., June 19, aged 66.

John Lawrence Hummel, M.D. Louisville, Ky. Medical College, 1893, of Louisville; died in the Louisville City Hospital, June 24, from heart disease, aged 40.

Isaac C. Hazlett, M.D. University of Pennsylvania, Philadelphia, 1870; died at his home in California, Pa., June 29, from cerebral hemorrhage, aged 74.

James A. Barnes, M.D. Medical College of Ohio, Cincinnati, 1875; a veteran of the Civil War; died at his home in Perrysville, Ind., June 21, aged 69.

Edward K. Harding, M.D. Louisville, Ky. Medical College, 1877; died at his home in Carterton, Va., April 7, from cerebral hemorrhage, aged 66.

John Henry Thieman, Jr., M.D. University of Louisville, Ky., 1902; died at his home in Louisville, June 9, from tuberculosis, aged 36.

George W. Hurlburt, M.D. McGill University, Montreal, 1869; died at his home in Thornbury, Ont., May 12, aged 77.

W. J. Trott, (license, Tenn., 1889), died at his home in Raus, Tenn., June 28, from heat exhaustion, aged 53.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

CAN NEBRASKA EDITORS BE BLUFFED?

Buck and Loffler, Itinerant "Specialists," try to Intimidate a Newspaper

Frederick Wellington Buck and Gilbert Dennis Loffler has each brought suit for $25,000 against the editor and publisher of the *Ord Weekly Journal*. The *Ord Weekly Journal* is the official county and city paper for the city of Ord, Valley County, Nebraska. Its editor and publisher is Mr. Horace M. Davis. Mr. Davis, in the line of his editorial duties, had occasion to call the attention of the Valley County public to the fact that it had in its midst Drs. Buck and Loffler the Quaker Indian Specialists of Denver. Mr. Davis said some other things about these two individuals, and the result is the filing of suits aggregating $50,000, against him. That these suits will ever come to trial no one concerned in them believes. They have been brought, doubtless for the main purpose of intimidating other editors of country newspapers and making them hesitate to turn the cold, cruel light of publicity on the peripatetic Buck-Loffler combination.

Gilbert Dennis Loffler (who sometimes signs himself Gilbert D. Loffler and at other times G. Dennis Loffler) is, according to our records, a graduate of Barnes Medical College, St. Louis, 1901. In the same year he received a license to practice in South Dakota. We find no record of his being licensed to practice in any other state. For some years previous to 1908 Loffler was located at Yankton, S. Dak. According to those living in the locality Loffler made a business of going through the country soliciting work from farmers. One alleged scheme was that of sending out an advance-agent under the guise of a horse-buyer, who, by careful questioning, would discover who was ailing in the homes of prospective victims. Soon after, Loffler is said to have appeared on the scene and astonished the people by his wonderful diagnostic ability. He would then, it is said, promise a cure in consideration of a note given for a certain number of months' "treatment." These notes, it is alleged, were immediately sold to bankers at a liberal discount.

After leaving Yankton, for reasons not necessary to go into at this time, Loffler went to Sioux Falls, S. Dak., where he is said to have been interested, first in a "medical institute," and later in an "Intravenous Therapy" scheme. From Sioux Falls he seems to have gone to Minneapolis and later to have drifted to Chicago, where he now lives. According to one Loffler letterhead, he has his "laboratory" at 22 Quincy Street, Chicago. It may or may not be a coincidence that this is also the address of the Accuracy Public Service Company, a concern which offers its services to quacks and purports to be able to secure evidence against reputable physicians. This was referred to in this department of THE JOURNAL, Feb. 28, 1914.

To indicate the scientific standing of Loffler, we quote, from a letter written by him some months ago, to a prospective victim; spelling and composition original with Loffler:

"The treatment consists of injecting a chemical into the blood stream by way of a vein in the arm and which causes no disturbance of any kind.

"The Chemical improves the Hemoglobine of the blood to normal and positively corrects the Density in which the patient can truthfully understand the possibilities of recovering strength and health.

"I wish, however, for you to first understand that we cannot perform miricles, we cannot hope to bring about good results in those cases that come to us without a foundation to build upon, but in the first and second stages of Tuberculosis and in all cases of Anaemia, stomach disturbances, Nervous disorders etc. we have a positive remedy and wish you to fully investigate it for your own good as well as your friends."

So much for Loffler. Frederick Wellington Buck before he found a lush field for the exercise of his peculiar qualities in the Dakotas, Nebraska and Colorado, used to live in Grand Rapids, Mich. According to the Michigan State Board of Registration, Buck went through a form of registration in Michigan in 1898 as a "graduate" of the Independent Medical College of Chicago. The Independent Medical College, as many of our readers will remember, was a fraudulent mail-order "diploma mill" which sold "diplomas" to any one who sent the cash. It was finally put out of business by the federal authorities.

When the Michigan medical act of 1899 came into force Buck applied for re-registration under this act, but the Michigan State Board of Registration refused to re-register him. At that time Buck was secretary of a concern calling itself the West Michigan Association of Physicians and Surgeons, an organization said to have been composed largely of men whose medical (?) qualifications were similar to those possessed by Buck. This "association" was behind a mandamus suit brought by two men, Metcalf and Reetz, to force the Board of Registration to register these men even though they had no proper qualifications. Both the cases went to the Michigan Supreme Court and were thrown out. The Reetz case was carried to the United States Supreme Court which upheld the constitutionality of the Michigan medical act and also the action of the Board in refusing to register applicants who were without proper qualifications.

Shortly after the Reetz case was decided, Buck found it advisable to leave Michigan. Although the medical directories for 1902 give Buck's address as Muskegon, Mich., Buck claims to have graduated from Central Medical College at St. Joseph, Mo., in 1902. According to the Central Medical College records, Buck gave Lepanto, Ark., as his home address. How Buck was able to be graduated in 1902 is a mystery, as he left Michigan at about the same date and at that time, according to the State Board of Registration, had absolutely no qualifications involving attendance at a reputable medical college.

In 1904 and 1906, Buck's name appears in the directory under Aberdeen, S. Dak. Various newspapers, during the winter of 1910-1911, contain advertisements published in news-item form telling of the "promotion" of Dr. Frederick Wellington Buck. The items state that Dr. Buck "has just been elected President of the Affiliated Offices of the Quaker Indian Medical Institutes with a salary of $10,000 a year." Buck's "promotion," according to the "news-items," was due "to his faithful record of six years' work in Nebraska without signing a single death certificate." The advertisements state further that "Dr. Buck will continue his office at Flagler, Colo., and will continue making his regular visits here every sixty days until next spring, when he will take personal charge of the Omaha or Denver office with two assistants. . . ." According to our records, Buck is not licensed to practice in any state except Nebraska, where he obtained his license in 1903.

This, then, is the brace of worthies that attempts to intimidate the editor of a country newspaper because he endeavors to protect his readers by directing attention to the character of these two itinerants. Fortunately, Mr. Horace M. Davis, editor and publisher of the *Ord Weekly Journal*, is being supported by the decent element in his locality. The Valley County Medical Society meeting at Ord, June 2, passed resolutions sustaining Mr. Davis in these words:

"*Be it Resolved*, that the members of the Valley County Medical Society assure Mr. Davis, the editor of the *Ord Journal*, their moral support and encouragement in his controversy and lawsuit with the alleged representatives of the Quaker Indian Specialists and that the society highly commends Mr. Davis and all other editors and publishers of their effort to awaken the public to the dangers of patronizing and placing their lives in the hands of medical practitioners whose professional reputation is questionable."

This resolution has also been officially endorsed by the Nebraska State Medical Association. It now only remains to be seen whether the impudent bluff of Buck and Loffler will cause other country newspapers to refrain from criticizing these men. It is unquestionably true that if the country papers do their duty they can make Nebraska so hot for both quacks and itinerant "specialists" that Buck and Loffler will give that state a wide berth.

FIGHTING FAKERY IN IOWA

State Board of Health Will Use Exhibit Cards Prepared by the Association

"The state of Iowa is going to fight fake medicine cures and quackery. The fight will not be carried on through the courts. It will not be taken before the legislature for additional legislation.

"Through the board of health, the state is going before the thousands of people who visit the state fair this year and call a spade a spade. Medicines and cures that have been branded by the American Medical Association as fakes will be named. Their advertisements will be exhibited. Their results will be pictured. Their effects on the life and health of their users will also be told.

"The women's building at the state fair will be 'plastered' with great placards denouncing various cures. Every woman who enters the building cannot help but see them. One placard in particular will show the testimonials of four persons. The testimonials declare the writers thereof were cured of consumption by various 'cures.' Right below the testimonials will appear the obituaries of the four and their cause of death, tuberculosis. Clippings from newspapers showing deaths from various kinds of headache powders and 'wonderful cures' will be reproduced on other placards.

"It is the first time, according to Dr. Sumner, that the state of Iowa has campaigned against fake medicines and quackery. Some of the placards have already been printed and received."—Des Moines (Iowa) *Capital*.

PROPRIETARY THERAPEUTICS

Le Mars, Iowa, is Put in the Vanguard of Progress

The methods by which proprietary manufacturers have attempted to teach physicians the science of therapeutics, are notorious. Those that have viewed this movement with disgust and discouragement will be interested in the following news item from the Le Mars (Iowa) *Sentinel* of recent date:

"Dr. ..... returned Monday from Detroit, Mich., where he went as one of a class of one hundred doctors selected from all over the United States, to take a course in the large Medical Research Laboratory located there. The lectures and demonstrations were given by Parke Davis & Co.'s staff of scientific medical research workers. All the latest discoveries in the cause and cure of diseases were here given to the visiting doctors long before they get to the medical profession at large."

Correspondence

Mauriceau's Seventeenth Century Treatise

To the Editor:—On "Round Prairie," 4 miles east of the village of Oconee in Shelby County, Ill., stands a fine old country residence that was built a number of years before the Civil War. It was for a time owned by Dr. W. T. Linn, who came from Ohio in 1844, served as private, hospital steward and in the medical director's office (at Detroit) during the war, and is yet living at the age of 99, having been a physician for seventy-five years.

In remodeling the old house last year, the present owner, Mr. Tony Hinton, found within its walls some letters, written to daughters of Dr. Linn (who was father of twelve children) fifty and sixty years ago. With them was found a mutilated copy of a work on obstetrics and diseases of women and the new-born that is evidently 246 years old. Mr. Hinton, who is related to my wife, kindly gave the book to me.

It is without cover or title-page and only enough of the introduction remains as to disclose the initials of the author —F. M.— in italic capitals. The body of the work is complete as far as page 352, the missing pages from the latter portion of the work carrying a part of Chapter XXXII. "Of the Scabs that are on the Head and Face of Children." There is nothing to indicate how many subsequent pages the book contained.

The type is of the Elzevir style, with bold hair-lines and short serifs, the lower case s being like f excepting that it has not the cross mark. There are a number of excellent engravings bearing the inscription, "Holmes Sculp."

On page 8, dealing with barrenness, the author notes that some finally conceive after being many years in wedlock: "Of which we have had a remarkable example in the person of the Queen mother, lately deceased, who was above twenty years married, and without children, and yet afterwards, to the great joy and content of all France she had our invincible Monarch Lewis XIVth, now reigning." (Anne of Austria died in 1666. She bore Louis XIV when 37 years old.)

This one extract alone enables us to identify the author, "F. M.," as François Mauriceau, since Roswell Park, in his "Epitome of the History of Medicine," states that this author "in 1668 published his Treatise on Diseases of Pregnancy and Childbirth, which was translated into all the languages of Europe." He was chief accoucheur to the Hôtel-Dieu in Paris.

The English translation is evidently by one of the Chamberlains, since at the beginning of Chapter XII, "The Signs to know whether the Child be alive or dead," occurs the following: "If there be any case, wherein a Chirurgeon ought to make the greatest reflection, and use most precaution in his art, it is this, *to know whether the infant in the womb be alive or dead," etc. And in a marginal note, printed in italics: "*This is not so necessary to those practitioners which can fetch a child coming right, or with the arm, without hooks or sharp instruments, as the translator of this book, and his father and brother can."

It will be recalled that Park (*loc. cit.*), page 166 also says: "About this time the Chamberlains, an English family devoted to the practice of midwifery, invented an instrument to facilitate the extraction of the foetal head when arrested, and one of them went to Paris, and, failing of success there, went on to Holland, where he sold his secret to two Dutch practitioners, who kept it only too faithfully."

While the work contains much sound reasoning in matters of pure mechanical detail, reminding one of Marion Sims in this respect, it abounds in quotations from the works of Hippocrates and Galen.

Certainly the therapeutics of those days would now be considered barbarous, and if carried out to-day would bring down on us the antivivisectionists and the Humane Society. Even the Christian Scientists would marvel at the number of difficulties that were in those days left to the beneficent hand of the Almighty.

Our author, however, mentions much of it in order to condemn it. Thus on page 249: "We'll now pass to convenient remedies for the belly of a new-laid woman. . . . All authors do appoint immediately after delivery, the skin of a black sheep, flea'd alive, for this purpose, to be laid all over her belly, and to lie on four or five hours; others will have a hare skin. . . . Truly, I believe that by the natural heat of such skins, the remedy is not bad; but I also fear lest in some small time after it may do more hurt than good, and that by its moistness, cooling of her, it may make her chill, which would be very prejudicial in stopping her cleansings, which ought to flow. . . . Besides it is a remedy of too much trouble; for there must always be a butcher ready for every woman that is laid, or some other person who can do it as readily, who must be for this purpose in the very chamber, or at least in the house, so that he have the skin very hot, according to directions."

And in the next succeeding paragraph: "They likewise direct a small plaister of *Galbanum*, with a little Civet in the middle, to be applied to the woman's navel, which as they imagine, is very proper to keep the womb in its place, because being delighted with that smell, it draws near to it of itself" (thus obviating the necessity of modern surgical intervention for suspension of the uterus). He sagely concludes, however, that "this remedy is a little superstitious; wherefore I am not for it, it being sufficient to keep the belly very warm, in the situation we have directed, and to prevent the least cold."

V. 19

He recites at length, the story told by Averroes, of the woman "who conceived in a bath wherein a man had washed himself a little before. . . . But this is a story fit to amuse little children," is his wise conclusion.

Chapter XXII treats of "The venereal Disease in Women with Child." He insists on active mercurial treatment by inunctions, purgations and salivation, in those cases "where the woman hath the *Pox* in the highest degree"; and cites cases in which they have gone through this treatment and been delivered of a healthy child at full time.

The author argues ably against the belief in maternal impressions, and yet the persistency with which medieval credulity still survives—in this one instance at least—may be attested by every practitioner in this country.

When it is recalled that the obstetric forceps was not introduced to the world until 1721, by Palfyn of Ghent, and that Sir James Simpson did not introduce chloroform anesthesia for women in labor until 1847, with Lord Lister's epochal labors beginning about thirty years later yet, the tragic occurrences of the lying-in chamber in those olden times must be something awful to contemplate at the present time. Indeed, the technic then employed would be amusing, if we could eliminate the tragic. Thus on page 193: "There are some women whose children (notwithstanding they come right) remain sometimes four, five or six whole days in the passage, and would continue there longer, if they were left alone, without being able to be born, unless assisted by art" (?).

Then follows a lengthy description of craniotomy, so commonly resorted to at that time. He then concludes with the statement that "for my part I had rather do this in the like occasion than resolve on that cruelty and barbarousness of the Caesarian Section, in which tis absolutely impossible ('tho many imposters, whom Rousset favors, assure the contrary) that a woman should ever escape."

In Chapter XIII, "How to Fetch the After-Burthen when the String is Broke," the author relates that he was once called to a poor woman in the Fauxbourgh St. Marcel three days after her delivery by a midwife, where he found her in "continual pain all over her belly, which held her like Throws of another Travail, voiding black humors extremely stinking and offensive, with which she also had a great pain in her head, and a fever, which in a short time would have augmented, if I had not presently fetched what remained." The midwife had left the placenta *in situ*, stating that it would come away of itself. (Apparently the professional ethics of many midwives has not undergone much revision to this day.)

After describing the removal of the retained placenta, the author observes: "She immediately after felt no more pain, and recovered soon after: but otherwise she had certainly been in danger of her life, because of the great corruption of what was left behind in the womb: for that which I fetched away smelt so ill, that my hands stank of it above two days after, although I washed them three or four times with vinegar."

(Unfortunately he does not give his mortality statistics for the series of cases immediately following, and doubtless could not have been led to believe that they bore any connection.)

Thus in Chapter X, "The causes of the Stoppage of the *Lochia* proceed either from a great looseness of the bowels because a great evacuation that way turns the *Lochia* and makes them stop; or any strong passions of the mind, as great fear or grief, or any anger or swoonings, for these things do cause the Humors to retire suddenly inwards, and by this quick motion they often cause suffocations. . . . Great colds stop the *Lochia*, because it closes the vessels and pores of the womb: the use of astringent remedies produces the same effect, as also cold drink; because by condensing and thickening the Humors, they hinder their easy flowing."

I should like to learn where a perfect copy of this work might be found.

J. P. SIMPSON, M.D., Palmer, Ill.

[The foregoing letter was submitted to Dr. Fielding H. Garrison, of the Surgeon-General's Library, who in reply says:]

"I find that the book described by your correspondent is in all probability one of the several editions of Hugh Chamberlen's English translations of Mauriceau published in the eighteenth century. This library has four of these, viz., 1718, 1727, 1752, 1755, the last being according to the biographers of Chamberlen the last English edition published. Each one of these corresponds with the description given by Dr. Simpson and he could no doubt find some one of them at least in such a collection as the John Crerar. There are also two earlier seventeenth century editions of this translation (1673, 1697) but these do not correspond with the description given, so it must refer to one of the eighteenth century imprints. The 1673 was the earliest to be published."

International Anti-Alcoholic Congress

To the Editor:—As the International Anti-Alcoholic Congress meets in this country next year, it may be interesting to know something of its origin. It was organized in Antwerp in 1885 by a group of teachers and doctors, who met to discuss the subject as a sociologic one. Two years later the second congress was held at Zurich, Switzerland, under the presidency of Forel, at which time the real organization took place. Its central object was to discuss the alcoholic problem in its racial, national, hygienic and sociologic aspects. No theories were to be endorsed by the congress or special plans for relief. It was to be a study and accumulation of the facts, regardless of what they indicated. From that time the congress has been held every two years, in different cities of Europe, and has gradually increased and become more and more authoritative, attracting the attention of sociologists and students of the great problems of race development.

In 1907 the Swedish government gave the congress a national character by appropriating money and assuming the responsibility of inviting the different nations of the world to send officially appointed delegates. This resulted in a very enthusiastic gathering of nearly 2,000 persons at Stockholm, and a representation from more than twenty governments of the world. The crown prince presided and leading officials of the government took active parts.

In 1909 the British government assumed the same responsibility, inviting delegates from all over the world officially to the congress at London. The Lord Chief Justice and home government were represented and a large number of distinguished medical men took a very active part.

The next congress, in 1911, was held under the auspices of the Holland government and took place at The Hague. Thirty-one governments sent officially appointed delegates, and over 2,000 persons, including many leading men of Europe, participated in a five days' session in which many most interesting papers were presented and discussed.

The Italian government sent a warm invitation to meet at Milan in 1913, and this was attended by an equally large number of distinguished persons, and the large volume of transactions indicates the magnitude of their work.

Our government sent an invitation to hold the next meeting here, and this was accepted, and will be held at Washington July, 1915. The government has already appropriated a large sum of money, and a committee is now engaged in perfecting the organization.

T. D. CROTHERS, M.D., Hartford, Conn.

Passing of a Type of General Practitioner.—It is perfectly true that a certain type of general practitioner is passing. The man who does an incredibly large amount of work in a slipshod manner cannot stem the tide of progression; he is being supplanted by a new type of general practitioner, by a better-trained man, who does his general work in a careful, deliberate, skilful and an adequate manner.—President's Address by Dr. James R. Carroll, Western Tennessee Med. and Surg. Assn.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POHL'S METHOD FOR REMOVING THE BLOOD

To the Editor:—Kindly refer me to Pohl's article regarding the complete removal of blood from various organs for biologic experimentation, as mentioned by you editorially commenting on Fischer's theory of nephritis, The Journal, June 20, 1914, p. 1971.

M. H. Kaiden, M.D., New York.

Answer.—Pohl's method is described in Abderhalden's "Handbuch der biochemischen Arbeitsmethoden" under the title "Das Arbeiten mit dem Organeiweiss." He obtains from the various organs material which he calls organ plasma. The organ plasma must be entirely free from blood. It is best obtained from organs with easily prepared afferent vessels such as the liver, kidney, spleen, etc. The liver is washed out in a reversed direction from the vena cava with an 0.8 per cent. solution of the purest sodium chlorid entirely free from calcium, and the washing out is continued until the wash-water flows away entirely colorless. For qualitative purposes it is sufficient to mince the blood-free organs, mix with the proper amount of physiologic salt solution with the addition of toluene or benzene, shake thoroughly, let stand in the cold for twenty-four hours and filter, pouring back the first part of the filtrate until it comes through clear. The filtrate resembles blood-serum. Even from a liver that contains glycogen a bright yellow filtrate will at last be obtained. For quantitative purposes when time for work is lacking, the organ emulsion can be rapidly dried and preserved, but it is best to work with fresh solutions.

FRAGMENTATION OF TUBERCLE BACILLI

To the Editor:—Is there any diagnostic significance in finding on examining a specimen of sputum microscopically that the tubercle bacilli are broken into small segments? Specimens from the same patient have been examined from time to time, and without exception all bacilli seen on the slide in question were segmented, while specimens from other patients examined at the same time under exactly the same conditions did not show segmentation.

F. J. Reid, M.D., Deming, N. Mex.

Answer.—The broken or splintered condition of tubercle bacilli has no diagnostic significance. The fragments, if really fragments of bacilli, are of the same diagnostic value as the whole bacilli. Opinions are much divided as to the significance of fragmentation with reference to prognosis. As a rule, however, authorities have admitted that no certain conclusions can be drawn from the form of the bacilli. Some, however, believe that the predominance of fragments indicates a relatively favorable prognosis.

TYPHOID SERUMS AND TEMPERATURE

To the Editor:—Have the typhoid serums of the present day any effect on fever? That is, will they shorten its course in any way like the diphtheria antitoxin, or is the old routine treatment of typhoid the better course to pursue? I have read literature for and against its use except as a prophylaxis. In other words, will its use lessen the severity of the disease?

W. S. Campbell, M.D., Albany, Mo.

Answer.—A distinction must be made between typhoid serums and typhoid vaccines. Typhoid serums have been recommended for the treatment of typhoid fever, but there is no consensus of opinion as to their value. The typhoid vaccine has been used in treatment by a number of clinicians who assert that it renders the course of the disease milder. It must be regarded, however, as still in the experimental stage.

VACCINES AND SERUMS IN HAY-FEVER

To the Editor:—Please give me the status of vaccines and serums in the treatment of hay-fever.

G. R. Reid, M.D., Toronto.

Answer.—An antitoxin serum has been included in N. N. R. Theoretically, there can be no vaccine treatment of this disease since it is produced, not by bacteria, but by the toxin of the pollen of various plants. Vaccines have been used derived from the micro-organisms found in the nasal secretions. They must be regarded as still on trial.

Medical Economics

This Department Embodies the Subjects of Postgraduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

THE DAVIS CASE AND THE IOWA STERILIZATION LAW

From a case arising out of an attempt to enforce the Iowa sterilization law, the endeavor is being made to test the constitutionality of such measures before the United States supreme court. The Iowa law is fairly typical of these enactments. It provides for the "prevention of the procreation of criminals, rapists, idiots, feeble-minded, imbeciles, lunatics, drunkards, drug-fiends, epileptics, syphilitics, moral and sexual perverts and diseased and degenerate persons." This law specifically empowers the state board of parole, together with the managing officer and the physician of each public institution in the state, to examine into "the mental and physical condition of the inmates of such institutions with a view of determining whether it is improper or inadvisable to allow any of such inmates to procreate." By a majority decision, this board may order the operation of vasectomy, or ligation of the fallopian tubes, as the case may be, on any inmate. It is particularly set forth that these operations shall be performed on any inmate convicted of prostitution, or twice convicted of other sexual offenses, including soliciting, or who have been twice convicted of a felony.

The Davis case arises under an order of the board authorizing the sterilization of certain convicts who fell under the last clause, that is, who had twice been convicted of a felony. Immediately on the issuance of this order, the plaintiff filed his petition in the federal district court, agreeable to the federal statute providing therefor, praying that an injunction issue to restrain the enforcement of the Iowa sterilization law, on the ground that this law controverted the constitution of the United States, in that the operation as authorized was a cruel and unusual punishment.

As we have seen, the language of the statute under which plaintiff would apparently be classed is "who have been twice convicted of a felony." But from this phraseology it is not quite clear as to just who would be within this class. Hence, the question arises whether the law should apply only to those who had been twice convicted subsequently to the passage of the act or whether it should receive a broader interpretation and apply to any one who had been twice convicted either prior or subsequently to the act. To obtain a proper construction of this language the board wrote the attorney-general for Iowa. In his opinion, the attorney-general said that the issue involves (*a*) the intention of the legislature, that is to say, whether or not the legislature intended the act to apply to persons confined or convicted prior to the taking effect of the act and (*b*) if the legislature so intended, is the act constitutional? The attorney-general resolved the question in favor of the first construction, because the latter construction would tend to render the law unconstitutional as being *ex post facto*, if this operation may be considered as a means of punishment or even if it contained directly an element of punishment. Hence, it was held by the attorney-general that the act should be construed to apply only to those persons who have been convicted of crime subsequently to the taking effect of the act. A further question was also presented in the Davis case, as to whether both convictions should be subsequent to the passage of the act, and whether both convictions should be had in the state of Iowa. This too, was resolved in the affirmative, the attorney-general holding that both convictions must be subsequent to the passage of the act and had in the state of Iowa. The board on receipt of this opinion reversed its order authorizing sterilization of the plaintiff and others.

These facts, together with the affidavits of the prison physician and of the warden of the state penitentiary, were

filed as exhibits in the reply of the attorney-general to the petition of the plaintiff for the injunction. This was apparently an attempt so to change the circumstances as to render the federal court without jurisdiction, in that the plaintiff would not be aggrieved by the act. But the court refused to dismiss the petition and enjoined the officers in question, that is, those vested by the statute with the enforcement thereof, from carrying out its provisions. These officials, deeming themselves injured by the decree and order entered by the court, prosecuted their appeal therefrom to the supreme court of the United States, which appeal was granted. Now this appeal would place directly before the United States supreme court the question as to whether or not the Iowa law, as applied directly to those convicted twice of felony, is unconstitutional as being a cruel and unusual punishment were it not for one fact. This is that the supreme court has held that this provision does not apply to state laws but only to enactments of Congress. This position of the court would seem to leave only a question of jurisdiction before it.

The validity of these laws has been twice determined in state supreme courts, but never by the federal court. The Washington supreme court held in the case of *State* v. *Feilen* that the Washington law was not unconstitutional as authorizing a cruel and unusual punishment, while the New Jersey supreme court held the law of that state unconstitutional as being an unreasonable exercise of the police power. The New Jersey law more nearly resembles that of Iowa than does the Washington measure; but the question as presented in the Feilen case is more nearly analogous to the present case, in that the Washington law was being applied to a man who had been convicted of a felony, namely, statutory rape, while in the New Jersey case, the law was being applied to a woman affected with epilepsy. The Washington case has been severely criticized as being hasty and ill-considered; but aside from this it is by no means a precedent for the United States supreme court, if by any possible chance it should be held that a constitutional question has been raised. And therefore, should that tribunal decide that the constitutional question is squarely before it and that the issue is not merely one of jurisdiction, the Davis case, when adjudicated, will be one of great moment and of tremendous import. In that case the issue that would be involved is whether a state can, in the interest of the public welfare, apply a scientific theory for the advancement of the human race and thereunder sterilize twice-convicted criminals, or whether such a measure would be a cruel and unusual punishment as prohibited by the federal constitution. The decision of the supreme court of the United States if made on this point would have bearing on all the sterilization laws so far enacted of which there are at present twelve: California, Indiana, Iowa, Wisconsin, Washington, New York, New Jersey, North Dakota, Michigan, Connecticut, Kansas and Nevada. A negative opinion would abrogate practically all these laws and would in effect deny the right of a state to adopt unproved theories for race betterment, while an affirmative finding will open the way to the application of a vast untried mass of theories. But as has been said it is extremely doubtful that the federal court will hold the question before them.

And thus the issue will be left as at present to the decisions of the several states.

Sanitation at Home.—It is a curious fact, and one by no means gratifying to our national pride, that when we wish to illustrate the value of modern sanitary laws and regulations we draw our most striking illustrations from outside the United States proper. For instance, modern sanitary science backed up by wise sanitary laws and sufficient authority to enforce these laws has abolished yellow fever in Cuba and the Canal Zone, has controlled largely the ravages of hookworm in Porto Rico and has isolated and controlled leprosy in Hawaii and the Philippines.—W. F. King, M. D., in *Jour. Indiana State Med. Assn.*

Book Notices

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. With the comments that have appeared in THE JOURNAL. Cloth. Price, 50 cents. Pp. 56. Chicago: American Medical Association Press, 1913.

New and Nonofficial Remedies is devoted to a discussion of medicinal substances which the Council on Pharmacy and Chemistry has found eligible for recognition under its rules. This separate volume of reports contains descriptions of preparations which were not satisfactory. It includes, first, preparations which were examined, found wanting in some particular and hence denied admission to New and Nonofficial Remedies, and second, articles which at one time were admitted to the book and later in the light of further evidence, or because they were no longer marketed ethically, had to be omitted. Many of the reports included in the present volume were previously published in THE JOURNAL. These reports are of great interest as showing the amount of time and the extent of the investigation which the Council gives to individual products. One report deals with a series of glycerin esters of lactic acid called Dianols. The Council with the aid of its chemical laboratory had the duty of convincing an unwilling scholar—a German firm—that its preparations are not what they are said to be, evidently because of inherent instability. In another report the Council showed the "Perfection Liquid Food Company" that a malt extract flavored with meat extract does not make a perfect food. Although the name "Perfection Liquid Food" is enough to condemn the product to thinking men, the Council studied patiently a mass of half information and commercial analytic reports which had been submitted before definitely rejecting the product. Those who have been inclined to give ear to the reports that the Council on Pharmacy and Chemistry takes its work lightly and allows personal bias to affect its decisions should get the present volume and read these reports. The Council possibly takes evidently worthless or fraudulent products too seriously, but its reports are certainly not based on snap judgment.

DIE ENTSTEHUNG DER MENSCHLICHEN LUNGENPHTHISE. Von Privatdozent A. Bacmeister, Assistant der medizinischen Universitätsklinik zu Freiburg. Paper. Price, 2.40 marks. Pp. 80. Berlin: Julius Springer, 1914.

In this monograph, Bacmeister discusses a problem on which there has been much difference of opinion and on which his researches have thrown much light. The agency of the bacillus in the production of all forms of tuberculosis is universally acknowledged and no longer merits discussion. The problem of the pathogenic nature of the bovine strain of bacillus may also be said to be settled, but it is not yet determined what part it may play in the causation of human phthisis. It is one thing to assert that the bovine tubercle bacillus is an excitant of tuberculosis in man and another to determine its share in the production of pulmonary tuberculosis as it appears in the adult human being. Bacmeister makes it plain that pulmonary tuberculosis in the adult is a different type of disease from that observed in animal experiment or in children. The disease in adults begins at the apex and progresses as a rule somewhat slowly, indicating a special predisposition of a part of the lung and a certain resisting power in the adult not seen in the child. The channel by which the bacteria reach the lung may be, according to Bacmeister, either by inhalation or through the blood from some former focus of infection. Phthisis may be produced in either of these ways, provided the apex of the lung is sufficiently predisposed. The influence of infection in childhood on the development of phthisis in adult life is thoroughly discussed. Bacmeister's conclusion is that the outbreak of phthisis in adult life after the occurrence of tuberculosis in infancy is due not to a general transformation of the whole organism, but to the production of a local predisposition. In the discussion of the individual predisposition of the lung to develop phthisis, Bacmeister formulates the following principle: All factors which lead to an

obstruction to the flow of lymph at the apex of the lung form an occasion for the localization of the tuberculous process in that neighborhood. In this retardation of the tubercle bacilli, in this obstruction to the lymph-flow, in this inability of the lung apices to free themselves from the bacilli which settle there by preference lies the peculiar local predisposing influence. The author's own work, which has shown that it is possible to so adjust the local and general condition as to produce almost typical phthisis in animals by obstructing the lymph-flow, emphasizes the importance of the principle stated. Disease of the upper air-passages may bring about such an obstruction of the lymph-flow, and the influence of general diseases of an enfeebling nature in hindering active respiration is a factor not to be neglected. The organic changes in the cartilage of the first rib and the deformity of the upper aperture of the chest which have been emphasized by Freund and Hart are to be regarded as factors, but not the only ones which tend to bring about the development of a local predisposition to apical phthisis. In conclusion the author draws the lesson that there is no reason to confine prophylaxis to a definite age period. The germ of phthisis may be received in childhood and the healthy adult may, at any time, fall a victim to the disease. The battle against the enemy must be carried on at every age. This fact is not affected by our knowledge that certain years of life are of special importance for the factors which lead to consumption both for the infection and for the development of the predisposition.

DER BLUTDRUCK DES MENSCHEN. Ergebnisse der Tonometrie. Von Dr. Arthur Horner, em. Assistent der I Medizin. Mit einem Vorwort von Prof. Dr. J. Pal. Paper. Price, 6 kroner. Pp. 198, with 7 illustrations. Vienna: Moritz Perles, 1913.

This monograph comprises a description of the physical and physiologic principles on which the measurement of the blood-pressure of man depends, followed by a description of the instruments and technic of the determination, and a study of the relations of the blood-pressure in various diseases. A bibliography of twenty-five pages gives one an indication of the space filled in modern clinical medicine by it and the labor necessary to produce a reliable review like the present. In therapy, drugs, physical remedies, etc., are discussed. A few proprietaries are noticed but not indiscriminately praised, as is so often the case. A brief discussion of the treatment of conditions of low blood-pressure is included. On the whole, the work must be regarded as a suitable guide to the diagnosis and treatment of conditions dependent on alterations in the blood-pressure.

CUNNINGHAM'S TEXT-BOOK OF ANATOMY. Edited by Arthur Robinson, M.D., F.R.C.S., Professor of Anatomy, University of Edinburgh. Fourth Edition. Cloth. Price, $6.50 net. Pp. 1596, with 1124 illustrations. New York: William Wood & Co., 1913.

Practically every section of this book has been revised, a few departments have been entirely rewritten, and some new chapters have been added. The deaths of Cunningham, Birmingham and A. H. Young have necessitated bringing new blood into the authorship of the volume. This has not, however, detracted from its quality. The Basle anatomic nomenclature is employed, the old terminology being also given in many instances. A glossary of old and new terms precedes the text and the illustrations, many colored, are abundant and instructive. On the whole, Cunningham's text-book may be considered a useful and dependable single volume work on anatomy.

KURZGEFASSTE LEHRE VON DEN KNOCHENBRÜCHEN MIT BESONDERER BERÜCKSICHTIGUNG IHRER MECHANIK UND BIOLOGIE. Herausgegeben von Dr. F. de Quervain, o. ö. Professor der Chirurgie. Unter Mitarbeit von Dr. Th. Christen, Privatdozent für Physikalische Therapie and Dr. H. Iselin, Privatdozent für Chirurgie, und nach den Mitteilungen und Aufzeichnungen des Verstorbenen Dr. H. Zuppinger, Privatdozent für Medizinische Mechanik. Part 1. Paper. Price, 9 marks. Pp. 140, with 123 illustrations. Leipsic: F. C. W. Vogel, 1913.

This is a short, clear and well-written treatise on the mechanics of the production and treatment of fractures in general, with diagrams, reproductions of roentgenograms and photographs showing the especial pathology and management of the more common varieties. The portion devoted to the open operative methods is short but sound, and properly conservative. Nothing new is advanced. There is shown the ingenious automatic extension apparatus for fractures of the femur designed by Zuppinger, to whom the book is in effect a memorial.

THE HOME NURSE. By E. B. Lowry, M.D., Cloth. Price, $1. Pp. 224. Chicago: Forbes & Co., 1914.

This practical little work is intended for use when sick members of a family must be cared for at home without the aid of a trained nurse. It is free from technical terms, and methods of bathing and administration of external remedies are so clearly described that any one of ordinary intelligence may easily follow the directions. One criticism: In discussing the nursing of typhoid fever the author says, "Occasionally it is necessary to give a turpentine enema." It might be well to omit this sentence from later editions as turpentine is seldom given on account of its effect on the kidneys, and some home nurses might be tempted to give it without orders if the tympanites was not relieved quickly by other measures.

Miscellany

Charles Dickens on Children's Hospitals

To the Editor.—Few of your readers are perhaps acquainted with the after-dinner speech delivered by Charles Dickens at the anniversary festival of the Hospital for Sick Children at Freemasons' Hall, London, Feb. 9, 1858. It is not contained in his collected works and is worth reprinting on account of its large human and social interest. Charles Dickens and Charles Reade did as much as any other men of their time to reform the status of prisons, insane asylums and dangerous occupations. Dickens was always a clever satirist of the foibles of doctors, and Reade was everywhere a keen critic of the medical practice of his time.

If the sentiment of this beautiful speech should seem exaggerated to those who see everything in terms of the "struggle for existence," it is well to remember that Dickens had a peculiarly delicate and kindly feeling for children as a result of the rough handling which he had himself received in his early life. With the exception of Shakespeare and Charles Lamb, no one wrote better of children than Dickens, and his hospital speech (subjoined) seems one of the best contributions ever made to the cause of social medicine by a man of genius.

F. H. GARRISON, M.D., Washington, D. C.

At the anniversay festival, after the usual loyal and other toasts, the chairman, Mr. Dickens, proposed "Prosperity to the Hospital for Sick Children," and said.

"*Ladies and Gentlemen:*

"It is one of my rules in life not to believe a man who may happen to tell me that he feels no interest in children. I hold myself bound to this principle by all kind consideration, because I know, as we all must, that any heart which can really toughen its affections and sympathies against those dear little people must be wanting in so many humanizing experiences of innocence and tenderness, as to be quite an unsafe monstrosity among men. Therefore I set the assertion down, whenever I happen to meet with it—which is sometimes, though not often—as an idle word, originating possibly in the genteel languor of the hour, and meaning about as much as that knowing social lassitude, which has used up the cardinal virtues and quite found out things in general, usually does mean. I suppose it may be taken for granted that we, who come together in the name of children and for the sake of children, acknowledge that we have an interest in them; indeed, I have observed since I sat down here that we are quite in a childlike state altogether representing an infant institution, and not even yet a grown-up company. A few years are necessary to the increase of our strength and the expansion of our figure; and then these

* tables, which now have a few tucks in them, will be let out, and then this hall, which now sits so easily upon us, will be too tight and small for us. Nevertheless, it is likely that even we are not without our experience now and then of spoilt children. I do not mean of our own spoilt children, because nobody's own children ever were spoilt, but I mean the disagreeable children of our particular friends. We know by experience what it is to have them down after dinner, and, across the rich perspective of a miscellaneous dessert to see, as in a black dose darkly, the family doctor looming in the distance. We know, I have no doubt we all know, what it is to assist at those little maternal anecdotes and table entertainments illustrated with imitations and descriptive dialogue which might not be inaptly called, after the manner of my friend Mr. Albert Smith, the toilsome ascent of Miss Mary and the eruption (cutaneous) of Master Alexander. We know what it is when those children won't go to bed; we know how they prop their eyelids open with their forefingers when they will sit up; how, when they become fractious, they say aloud that they don't like us, and our nose is too long, and why don't we go? And we are perfectly acquainted with those kicking bundles which are carried off at last protesting. An eminent eye-witness told me that he was one of a company of learned pundits who assembled at the house of a very distinguished philosopher of the last generation to hear him expound his stringent views concerning infant education and early mental development, and he told me that while the philosopher did this in very beautiful and lucid language, the philosopher's little boy, for his part, edified the assembled sages by dabbling up to the elbows in an apple pie which had been provided for their entertainment, having previously anointed his hair with the syrup, combed it with his fork, and brushed it with his spoon. It is probable that we also have our similar experiences sometimes, of principles that are not quite practice, and that we know people claiming to be very wise and profound about nations of men who show themselves to be rather weak and shallow about units of babies.

"But, ladies and gentlemen, the spoilt children whom I have to present to you after this dinner of to-day are not of this class. I have glanced at these for the easier and lighter introduction of another, a very different, a far more numerous, and a far more serious class. The spoilt children whom I must show you are the spoilt children of the poor in this great city, the children who are, every year, for ever and ever irrevocably spoilt out of this breathing life of ours by tens of thousands, but who may in vast numbers be preserved if you, assisting and not contravening the ways of Providence, will help to save them. The two grim nurses, Poverty and Sickness, who bring these children before you, preside over their births, rock their wretched cradles, nail down their little coffins, pile up the earth above their graves. Of the annual deaths in this great town, their unnatural deaths form more than one-third. I shall not ask you, according to the custom as to the other class—I shall not ask you on behalf of these children to observe how good they are, how pretty they are, how clever they are, how promising they are, whose beauty they most resemble—I shall only ask you to observe how weak they are, and how like death they are! And I shall ask you, by the remembrance of everything that lies between your own infancy and that so miscalled second childhood when the child's graces are gone and nothing but its helplessness remains; I shall ask you to turn your thoughts to these spoilt children in the sacred names of Pity and Compassion.

"Some years ago, being in Scotland, I went with one of the most humane members of the humane medical profession, on a morning tour among some of the worst-lodged inhabitants of the old town of Edinburgh. In the closes and wynds of that picturesque place—I am sorry to remind you what fast friends picturesqueness and typhus often are—we saw more poverty and sickness in an hour than many people would believe in a life. Our way lay from one to another of the most wretched dwellings, reeking with horrible odors; shut out from the sky, shut out from the air, mere pits and dens. In a room in one of these places where there was an empty porridge-pot on a cold hearth, with a ragged woman and some ragged children crouching on the bare ground near it—where, I remember as I speak, that the very light, refracted from a high damp-stained and time-stained house-wall, came trembling in, as if the fever which had shaken everything else there had shaken even it—there lay, in an old egg-box which the mother had begged from a shop, a little feeble, wasted, wan, sick child. With his little wasted face, and his little hot, worn hands folded over his breast, and his little bright, attentive eyes, I can see him now, as I have seen him for several years, looking steadily at us. There he lay in his little frail box, which was not at all a bad emblem of the little body from which he was slowly parting—there he lay, quite quiet, quite patient, saying never a word. He seldom cried, the mother said; he seldom complained; 'he lay there, seemin' to woonder what it was a' about'. God knows, I thought, as I stood looking at him, he had his reasons for wondering—reasons for wondering how it could possibly come to be that he lay there, left alone, feeble, and full of pain, when he ought to have been as bright and as brisk as the birds that never got near him—reasons for wondering how he came to be left there, a little decrepit old man pining to death, quite a thing of course, as if there were no crowds of healthy and happy children playing on the grass under the summer's sun within a stone's throw of him, as if there were no bright moving sea on the other side of the great hill overhanging the city; as if there were no great clouds rushing over it; as if there were no life, and movement, and vigor anywhere in the world—nothing but stoppage and decay. There he lay looking at us, saying, in his silence, more pathetically than I have ever heard anything said by any orator in my life, 'Will you please to tell me what this means, strange man? and if you can give me any good reason why I should be so soon, so far advanced on my way to Him who said that children were to come into His presence, and were not to be forbidden, but who scarcely meant, I think, that they should come by this hard road by which I am traveling; pray give that reason to me, for I seek it very earnestly and wonder about it very much'; and to my mind he has been wondering about it ever since. Many a poor child, sick and neglected, I have seen since that time in this London; many a poor sick child I have seen most affectionately and kindly tended by poor people, in an unwholesome house and under untoward circumstances, wherein its recovery was quite impossible; but at all such times I have seen my poor little drooping friend in his egg-box, and he has always addressed his dumb speech to me, and I have always found him wondering what it meant, and why, in the name of a gracious God, such things should be!

"Now, ladies and gentlemen, such things need not be, and will not be, if this company, which is a drop of the life-blood of the great compassionate public heart, will only accept the means of rescue and prevention which it is mine to offer. Within a quarter of a mile of this place where I speak, stands a courtly old house, where once, no doubt, blooming children were born, and grew up to be men and women, and married and brought their own blooming children back to patter up the old oak staircase which stood but the other day, and to wonder at the old oak carvings on the chimney-pieces. In the airy wards into which the old state drawing-rooms and family bedchambers of that house are now converted are such little patients that the attendant nurses look like reclaimed giantesses, and the kind medical practitioner like an amiable Christian ogre. Grouped about the little low tables in the center of the rooms are such tiny convalescents that they seem to be playing at having been ill. On the dolls' beds are such diminutive creatures that each poor sufferer is supplied with its tray of toys; and, looking round, you may see how the little tired, flushed cheek has toppled over half the brute creation on its way into the ark; or how one little dimpled arm has mowed down (as I saw myself) the whole tin soldiery of Europe. On the walls of these rooms are graceful, pleasant, bright childish pictures. At the beds' heads are pictures of the figure which is the universal embodiment of all mercy and compassion, the figure of Him who was once a child himself, and a poor one. Besides these little creatures on the beds, you may learn in that place that the number of small outpatients brought to that house for relief is no fewer than ten thousand in the compass of one single year. In the room in which these are received, you may see against the wall a box on which it is written that it has been calculated that if every grateful mother who brings a child there will drop a penny into it, the hospital funds may possibly be increased in a year by so large a sum as forty pounds. And you may read in the hospital report, with a glow of pleasure, that these poor women are so respondent as to have made, even in a toiling year of difficulty and high prices, this estimated forty, fifty pounds. In the printed papers of this same hospital, you may read with what a generous earnestness the highest and wisest members of the medical profession testify to the great need of it; to the immense difficulty of

treating children in the same hospitals with grown-up people, by reason of their different ailments and requirements, to the vast amount of pain that will be assuaged, and of life that will be saved, through this hospital; not only among the poor, observe, but among the prosperous too, by reason of the increased knowledge of children's illnesses, which cannot fail to arise from a more systematic mode of studying them. Lastly, gentlemen, and I am sorry to say, worst of all (for I must present no rose-colored picture of this place to you—I must not deceive you) lastly, the visitor to this children's hospital, reckoning up the number of its beds, will find himself perforce obliged to stop at very little over thirty; and will learn, with sorrow and surprise, that even that small number, so forlornly, so miserably diminutive compared with this vast London, cannot possibly be maintained, unless the hospital be made better known; I limit myself to saying better known, because I will not believe that in a Christian community of fathers and mothers, and brothers and sisters, it can fail, being better known, to be well and richly endowed.

"Now, ladies and gentlemen, this without a word of adornment—which I resolved when I got up not to allow myself—this is the simple case. This is the pathetic case which I have to put to you; not only on behalf of the thousands of children who annually die in this great city, but also on behalf of the thousands of children who live half developed, racked with preventable pain, shorn of their natural capacity for health and enjoyment. If these innocent creatures cannot move you for themselves, how can I possibly hope to move you in their name? The most delightful paper, the most charming essay, which the tender imagination of Charles Lamb conceived, represents him as sitting by his fireside on a winter night telling stories to his own dear children, and delighting in their society, until he suddenly comes to his old, solitary, bachelor self, and finds that they were but dream children, who might have been, but never were. 'We are nothing,' they say to him; 'less than nothing, and dreams. We are only what might have been, and we must wait on the tedious shore of Lethe, millions of ages, before we have existence and a name.' And immediately awaking, he says, 'I found myself in my armchair.' The dream-children whom I would not raise, if I could, before every one of you, according to your various circumstances, should be the dear child you love, the dearer child you have lost, the child you might have had, the child you certainly have been. Each of these dream-children should hold in its powerful hand one of the little children now lying in the child's hospital, or now shut out of it to perish. Each of these dream-children should say to you, 'O, help this little suppliant in my name; O, help it for my sake! Well!—And immediately awaking, you should find yourselves in the Freemasons' Hall happily arrived at the end of a rather long speech, drinking 'Prosperity to the Hospital for Sick Children,' and thoroughly resolved that it shall flourish."

Cost of Medical Treatment in Bohemia

"The city of Prague", says Consul Frank Deedmeyer, Prague, Austria, "population with suburbs 600,000, has about 800 practicing physicians. A medical house call to a middle-class family costs $0.60; an office call, $0.50; a night call, between 9 and 7, $1.20 to $2, according to distance. Professors attached to the clinics of the two local universities charge much more—$2 to $4 for a house call and $1.20 to $2 for an office visit. The physicians, except those of the homeopathic school, do not supply medical remedies.

"At most of the hospitals under the control of the Roman Catholic associations, treatment and care are entirely free; at the Allgemeines Krankenhaus in Prag (General Hospital in Prague), a government institution, which had over 24,000 admissions in 1913, the charges to patients, including medical treatment and nursing, per day, are: Class I, $2.40; Class II, $1.20; and Class III, $0.52. To citizens of Prague the Class III charge is only $0.31. The cost per day at a private sanatorium, of which there are many, ranges from $2.20 to $4.80. Nurses at hospitals are paid $0.80 per day for the first year, with an annual increase of $0.20 per month; at sanatoriums, from $6 to $8 per week; at private houses, from $0.80 to $1 per day, board being always included for all nurses."

Medicolegal

Admissible Evidence in Action for Malpractice

(Baker vs. Langan (Ia.), 145 N. W. R. 513)

The Supreme Court of Iowa says that a verdict for the defendant ought not to have been directed in this action for alleged malpractice in the treatment of a simple fracture of both bones of the plaintiff's leg about 3 inches above the ankle-joint. There should be a new trial. The defendant introduced no testimony, and that offered and received for and on behalf of the plaintiff should be given the strongest interpretation in his favor. Of course no one may expect as strong a leg after as before a fracture, and no physician or surgeon is held to a guaranty of results; but he is held to the exercise of the skill and learning of the profession generally in the community in which he practices. Whether or not he did that in a particular case may be proved either deductively or inductively, and the usual and customary treatment of physicians and surgeons in the particular locality may be shown in order to ascertain whether or not the defendant exercised the skill required of him.

The court thinks too, that competent physicians and surgeons who have examined the result and learned of the treatment or know what treatment should have been given, if assured of the patient's prior condition of health, and of his own care and treatment of the fracture, may properly give an opinion as to whether or not they found such results as usually follow from the customary treatment of such a case by men possessing the usual skill and learning of their profession in the locality where they practice. Such testimony must of necessity be admissible, for it may happen that the injured man is incapable himself of accurately describing the treatment given.

Certain questions were propounded to show the condition of the plaintiff's blood at the time he was injured. It was true that he was not complaining of any infection, but the record showed that the condition of his blood might have had something to do with the success of the treatment given him by the defendant. In view of the other testimony in the case, the court is inclined to think that the witness should have been permitted to answer the questions propounded, leaving the final conclusion to the jury.

Injury From Hot-Water Bag During Operation—Permitting Wound to Heal Over Drainage-Tube—Husband's Damages

(Reeves vs. Lutz (Mo.), 162 S. W. R. 280)

The St. Louis (Mo.) Court of Appeals says that the defendant was employed to remove a cancer from the breast of the plaintiff's wife. The defendant's obligation was to exercise ordinary care for the protection of Mrs. Reeves from burns likely to occur as a result of the application of hot-water bags while the operation was being performed. If, as the defendant and the expert witnesses said, burns are frequently inflicted in such a manner, then the precepts of ordinary care required the defendant to anticipate this possibility. The evidence was that the hot-water bag was wrapped in a towel and the patient's limb covered with a flannel operating garment. A considerable and severe burn, however, ensued from the application of the hot-water bag. Inspection of the bag would have revealed the probabilities of a burn, notwithstanding the towel and the flannel garment. Moreover, the application of the hot-water bag continued for two hours, and during that time some inspection should have been made to ascertain if an injury was thus being inflicted. Obviously the evidence revealed a case for the jury. An instruction was erroneous which implied that if the defendant used proper care in performing the operation, he was then acquitted of the full measure of his obligation, and this, too, although the hot-water bag came in contact with the person of the plaintiff's wife and burned

her. It was not enough for the defendant to exercise the requisite skill and care in performing the operation; he was under obligation also to look out for and prevent the burn. There was no evidence in this case justifying the theory of accident.

The drainage-tube involved was inserted in the wound in the right breast, and the averment of negligence was that the defendant "carelessly and unskilfully permitted said wound completely to heal up and over said drainage-tube and gauze, and negligently, carelessly and unskilfully permitted the same to remain within the body of the plaintiff's said wife." No one can doubt that this was negligence on the part of the defendant, if established to the satisfaction of the jury. It could not be said that a verdict should have been directed for the defendant on this cause of action, because the evidence was uniform that it was proper practice to insert a drainage-tube in the wound and permit it to remain there until the healing was complete. No witness testified that it was proper to permit the wound to heal over the tube, and it is certain that none would undertake to do so.

The plaintiff sought to recover only for the loss of services, companionship and society of his wife as a result of the burn and permitting the wound to heal over the drainage-tube. For the latter the court does not consider a verdict of $1,500 was excessive. The plaintiff was not entitled to recover for the pain and suffering his wife endured, but he was entitled to the services of his wife of which such pain and suffering deprived him, and he was entitled, too, to the companionship and society of his wife free of such pain and suffering as the defendant's act entailed on her. Therefore it was not error to permit the plaintiff to detail the pain and suffering of his wife incident to the concealed tube in her breast and subsequent for a time to its removal.

Case in which Surgeon not Liable for Death when Administration of Anesthetic was by Medical Student

(Michael A. Levy, Administrator, vs. Vaughan (D. C.), 42 Wash. Law R. 258)

The Court of Appeals of the District of Columbia says that the patient was a man about 6 feet, 1 inch in height, weighing 275 pounds and suffering from hernia, on whom the defendant undertook to perform an operation at a hospital. The ether was administered, in the room provided therefor, by what is called the "open method," with the "Esmarch inhaler." The administrator of the ether was a medical student in his last year of a four-year course, to graduate in the following June. He had carefully studied the subject of administering ether, and had observed its administration in at least a thousand cases in a number of hospitals. He had actually administered ether, before, in eight or ten cases. Two medical interns, graduated surgeons and physicians, were in and out of the room during the administration. Not more than 3 ounces of ether were administered during the twenty-five or thirty minutes required to get the patient completely under its influence. No unusual condition was noticed until after the patient had been lifted to the operating-table. He was then observed to be cyanotic. The defendant, who was waiting in the operating-room, noticed the condition immediately, felt the patient's pulse, and started artificial respiration. The patient seemed better and was taken to the ward, but respiration became bad again. Remedies were used and the defendant was sent for and again performed artificial respiration; but the patient's respiration ceased and he died. A necropsy was performed and the patient's heart was found to be in a state of fatty degeneration. A verdict was properly directed for the defendant, judgment on which is affirmed with costs. It was the duty of the defendant to use such reasonable care and skill as are usually given by surgeons in good standing, but it was incumbent on the plaintiff to prove that the death was caused by the failure of the defendant to exercise such care. There was no evidence whatever to justify submission to the jury of the question of negligence either in the preliminary examination of the patient or in the administration of the ether. There was no error in refusing to permit the following question to be answered by a medical witness: "In your opinion, would a surgeon be in the exercise of due care if he intrusted the administration of ether to a student of the description given, without making some provision for the presence of an experienced physician?" The evidence on behalf of the plaintiff showed that at least two experienced hospital physicians were present generally during the administration. They were employed in the hospital, and that they may not have been provided by the defendant was wholly immaterial. Nor was it material that the hospital physicians were licensees of another state, and not of the District of Columbia, as they were not practicing medicine in the District, but were engaged in the hospital and shown to be competent.

Requirement as to Record of Certificate

(Byrd vs. State (Tex.), 162 S. W. R. 360)

The Court of Criminal Appeals of Texas says that, under the present law of 1907, no one can legally practice medicine in that state unless he has, and has recorded, a certificate granted by the board of medical examiners either with or without a personal examination. So that under the present law, whether he has a diploma or not, or a dozen diplomas, for that matter, the law does not provide that he may record it or them, as his authority to practice medicine; but they may be used by him as evidence before the board to avoid an examination for a certificate, and thereby to procure the verification license provided for by said act.

The unconstitutionality of the law was urged on the ground that it does not definitely and intelligently describe before whom certificates shall be registered. The fact that the act requires the physician to register his certificate to practice medicine "in the district clerk's office of the county in which he resides," in Section 4 of the act, and that the next section or article makes it the duty "of the district clerk of each county in this state to purchase a book," etc., in which to register such license, instead of, as the appellant claimed, that he should be designated as "the clerk of the district court," is certainly very hypercritical and should mislead no one, and is definite and certain in that the clerk of the district court is meant, if there is any difference between the "clerk of the district court" and the "district clerk" of a given county. The appellant's contention as to the unconstitutionality of the act on this ground, and that the indictment was fatally defective because thereof, was wholly without merit.

Privilege Covers Instructions and Their Observance—Acts not Waivers

(Marfia vs. Great Northern Railway Co. (Minn.), 145 N.W.R. 385)

The Supreme Court of Minnesota says that one of the plaintiff's legs had been broken and that owing to an improper union of the bones the leg was shortened. The defendant railway company sought to show by the attending physicians that the plaintiff had failed to heed or follow their instructions as to the care and treatment of the injured limb and thus that the plaintiff himself had displaced these bones by his own improper acts. The company contended that instructions given the patient and his attitude and conduct as to obeying them were not within the inhibition of the statute as to privileged communications. But it was held that this testimony was properly excluded under the statute supra. The testimony of the physicians called as witnesses in this case by the plaintiff was confined to the information acquired by their own examination, made shortly before the trial and after the leg had healed. The plaintiff himself testified concerning the manner in which the injury occurred and his present condition in consequence thereof. Neither the plaintiff nor the physicians called by him testified as to the matters which the defendant sought to elicit from the attending physicians. The bringing of the action and the presentation of the testimony adduced by the plaintiff did not operate as a waiver of the privilege.

Society Proceedings

COMING MEETINGS

American Roentgen Ray Society, Cleveland, Sept. 9-12.
Michigan State Medical Society, Lansing, Sept. 11-12.
Oregon State Medical Association, Portland, Sept. 10-11.
Colorado State Medical Society, Boulder, Sept. 8-10.

AMERICAN CLIMATOLOGICAL ASSOCIATION

Thirty-First Annual Meeting, held at Atlantic City, N. J., June 19 and 20, 1914

Officers Elected

The following officers were elected for the ensuing year: president, Dr. Henry Sewall, Denver; vice-presidents, Dr. Arthur K. Stone, Boston, and Dr. James Alexander Miller, New York; secretary and treasurer, Dr. Guy Hinsdale, Hot Springs, Va.

The next annual meeting will be held in San Francisco.

Prolonged Subnormal Temperature in Tuberculosis

DR. A. K. STONE, Boston: At a certain period of the disease, usually after the active febrile stage, there is a time when the temperature curve shows a marked excursion into the subnormal. In this stage, not much more latitude should be allowed the patients in their movements than in the active stage. When there is a constant variation in the temperature from the normal, there must be a pathologic process going on in the body. This subnormal temperature has no prognostic value. The patients are usually improving at this time, but very little is required to give them an exacerbation of the disease. Persistent subnormal temperature is rather a common symptom in tuberculosis, and when this symptom is present, tuberculosis should be suspected.

DISCUSSION

DR. CHARLES L. MINOR, Asheville, N. C.: There is one common causation for this subnormal temperature, and that is lowered activity of metabolism. It expresses inherent weakness, overexertion and very cold weather. It is a sign that the patient needs vitalizing.

DR. GEORGE W. NORRIS, Philadelphia: Persistent subnormal temperature is frequently associated with lowered blood-pressure, and occurs in persons with visceroptosis. There is considerable difference of opinion in regard to the value of blood-pressure readings in tuberculosis. These patients have a general unfitness to maintain a normal blood-pressure. They may be suspected of having tuberculosis on this account, when they do not have it at all.

DR. WILLIAM LEROY DUNN, Asheville, N. C.: There is a great discrepancy between the rectal and the mouth temperature in many of these cases; and before it is decided that a patient has a persistent subnormal temperature, rectal observations should be made.

DR. C. FOX GARDINER, Colorado Springs, Colo.: I should look to the correctness of the thermometers also. Some of those possessed by patients are very inaccurate.

DR. GORDON WILSON, Baltimore: In studying cases of broken compensation, which constantly show subnormal temperature, I have found the diastolic blood-pressure to be low. As this came up, the temperature also came to normal. I have found this true also in tuberculous cases.

DR. JAMES A. MILLER, New York: I think it well to go slow in drawing definite conclusions from temperature observations. We need more careful observations of the normal temperature under varying conditions of life—environment, atmosphere, exercise, etc.—both by the mouth and by the rectum.

DR. CLEAVELAND FLOYD, Boston: I have seen some striking results from taking the mouth and the rectal temperature at the same time.

DR. CARROLL E. EDSON, Denver: The fundamental basis of the physiology of normal temperature has not yet been worked out wholly; and until this has been done, we should be careful in drawing conclusions. The clinical temperature is of two kinds, deserving different management; those in which the daily range is slight, but in which it is slightly subnormal in the morning: and those in which, although the afternoon temperature may be only 98.2 F., yet the morning temperature is but 97.8 F., so that there is as much swing as if there were the ordinary range of tuberculous temperature. The latter cases constitute the type in which the resistance is low, and correspond to the type of low diastolic pressure. Rest in bed is important for such patients.

DR. W. D. ROBINSON, Philadelphia: In taking the temperature by the rectum, one should be sure that there is no low-grade pathologic process taking place in the lower bowel (as is often the case), as this would influence the temperature.

Housing and Its Relation to Climate and Health

DR. ESTES NICHOLS, Portland, Me.: America has been very slow in recognizing the importance of housing and its relation to climate and the health of the masses. The method of having one home on top of another, many stories high, is unnatural and unhealthful. The present system of apartment houses is placing a premium on the rearing of children. We should take a more active part in housing reform. We should apply to the cities some of the principles of housing used at health resorts.

DISCUSSION

DR. THOMAS DARLINGTON, New York: It is sometimes difficult to determine how much of the ill health of the people is due to overcrowding, and how much to other causes, such as lack of ventilation, bad food, soil pollution, contagion, etc.

DR. H. M. LANDIS, Philadelphia: The people have quite as much to do with making the result as the houses. Any improvement in the slums will have to come as much through educating the people how to use hygienic conveniences that are at their command as through providing them with properly constructed houses.

DR. DAVID R. LYMAN, Wallingford, Conn.: If the people are taught to make use of what housing conditions they have, they can get along better in good tenements in the city than they can in the country. Some of the worst infections with tuberculosis that I have met have been in the rural districts. There the people have many natural advantages, but do not know how to use them.

DR. ROBERT C. PATERSON, Ste. Agathe des Monts, Quebec: If the people should leave the cities and go to the rural districts, how could we supply them with proper facilities for sewage disposal and other sanitary advantages? In the mountains north of Montreal, where we send people for their health, we find that the death-rate from tuberculosis is as high as anywhere else, if not higher. Though the people can get fresh air, they will not get it.

DR. E. O. OTIS, Boston: One of the worst slum districts of Northampton was formerly occupied mostly by Irish people, and the death-rate from tuberculosis was very high. The Irish have now been almost entirely displaced by the Russian Jews and Italians, and a most striking fall in the death-rate from this disease has taken place.

DR. W. D. ROBINSON, Philadelphia: In Philadelphia, we have accomplished a great deal by the establishment of open-air schools for children. It is better to try to deal with conditions of environment as they exist than to try to change them. Our county medical society, some years ago, appointed a Committee on Infant Mortality, which has been very active in establishing baby-saving shows for the education of the people. These have been wonderfully successful, and have reached the class desired.

Some Unsolved and Debatable Problems in Tuberculosis

DR. E. H. OTIS, Boston: An undue amount of emphasis is placed on the physical signs in the early diagnosis of tuberculosis. In regard to forbidding marriage for tuberculous persons, I think that one should be cautious about advising

race suicide, except for very good reasons. I do not believe that any predisposition to the disease is caused in the offspring that cannot be overcome by hygienic surroundings and proper food. Undue exercise of both the lung and the body are attended with danger; while, on the other hand, rest sometimes has a very good effect. Open-air treatment has no value in advanced cases. It is better to keep such patients in a well-ventilated room. The problem of prevention with persons who, though actively tuberculous, are able to continue their business and their social duties, is a difficult one to solve. In trying to conceal their condition, they fail to take proper precautions.

Rest and Exercise in the Treatment of Pulmonary Tuberculosis

DR. C. L. MINOR, Asheville, N. C.: Exercise is an elastic term, and we should be definite in specifying the amount, both physical and mental, that our patients should take. I would make a distinct arbitrary division into light, medium and severe exercise. Walking is the best physical exercise. Mental exercise and rest are more difficult to control than physical. It would be desirable to have the patients become accustomed to doing a certain amount of work, of the kind that they are going to do when they return to business.

DISCUSSION

DR. THOMAS DARLINGTON, New York: There can be no stated rule with regard to the question of rest and exercise. Each individual case must be studied by itself.

DR. C. L. MINOR, Asheville, N. C.: I am satisfied that we have been overstrict in forbidding the marriage of tuberculous patients. We must consider the welfare of the man, the woman and the child in such cases, and also that of the community. If the child is separated from the mother immediately after birth, it is possible for it to grow up healthy. The world would be much poorer without the good done by the offspring of tuberculous marriages.

DR. D. ROCHESTER, Buffalo: If tuberculous persons are allowed to marry, they should be instructed thoroughly regarding the dangers connected with marriage. We lose less by forbidding tuberculous women to marry than we gain by letting them do so. Undue emphasis is often placed on physical signs when they have not been found; but sometimes they are not found, when they are present, because the examiners are not able to find them. The frequency of the pulse and its character afford a valuable sign in the diagnosis of tuberculosis.

DR. C. F. GARDINER, Colorado Springs, Colo.: At Colorado Springs, there is much less disease among the children of tuberculous parents than one would expect.

DR. JAMES A. MILLER, New York: This matter varies considerably according to the point of view, whether this be that of a physician at a sanatorium or health resort or one in a large city, where the question of early diagnosis is most important, and where the responsibility for this is greatest. We have, perhaps, overdone our insistence on this responsibility, so that some physicians make a diagnosis of tuberculosis on insufficient grounds. In large cities, where the temptations to overdo are so great, we shall get along better by leaning more to the rest idea than by emphasizing the advantages of exercise.

DR. HERBERT M. KING, New York: If our conclusions had any effect, the subject would be more interesting; but I have found that my advice is never followed unless it happens to be the kind that the patient wants, especially when it affects the laws of affinity. In the advanced and long-standing case, we have in history data which will enable us to judge correctly the patient's ability to exercise. I consider therapeutic exercise a valuable method in judiciously selected cases.

DR. WILLIAM L. DUNN, Asheville, N. C.: It would be unfortunate if it should go out that this society looks with indifference on the marriage of the tuberculous. In giving exercise, the patient's original occupation should be considered, and the form of exercise be such as will enable him to prepare to resume it. In the early cases the patients should be rested even beyond the required limit, because it it important to see that a good result is obtained at the stage when it may be secured easily.

DR. F. M. POTTENGER, Los Angeles: The advice given in regard to marriage should depend, to a large extent, on the social status of the patient. We must recognize the fact that the tuberculous person has the same desires as others, and we must sometimes yield to them when we do not wish to do so. If general practitioners would take a careful history and examine the patient thoroughly for a week, they could make the diagnosis of probable tuberculosis in nearly every active case. Men not constantly doing this work are bound to be misled, if they rely solely on physical signs. Well-to-do persons have less chance of having their cases diagnosed in the incipient stage than the poor have, for a number of reasons.

DR. LOUIS V. HAMMAN, Baltimore: Some years ago I collected statistics of patients who showed slight apical abnormalities; and I found, five or six years afterward, that although they had lived under the ordinary conditions, very few had developed active tuberculosis. I believe that this type of persons are the ones who, when sent to sanatoriums, figure largely in the favorable results of these institutions. They would not have developed the disease if left at home. This has a tendency to make us overconfident in the results of treatment in early cases.

DR. C. L. MINOR, Asheville, N. C.: What we are trying to give is a rest-cure plus a work-cure, weaving the two together so as to get satisfactory results.

Air-Baths in Treating Tuberculosis

DR. CHARLES FOX GARDINER, Colorado Springs, Colo.: There are many days on which you cannot give both sun and air exposure. I have, therefore, invented an apparatus for giving air-baths in the room. It consists of a cage that fits over the bed and covers the patient, with the exception of his head. He lies on the bed naked, and the cage is covered with a sheet. A number of electric lamps are in the cage, and as many of these are lighted as are necessary to make the air sufficiently warm. The current of air is filtered through a three-ply screen of mosquito-netting. It is not necessary that it should be fresh air. The treatment tends to increase the blood-pressure and produce better metabolism. It is cheap and practical, can be used with sick patients, and does not depend on irregularities of weather conditions. Neither does it interfere with any other treatment you may wish to give.

DR. THOMAS DARLINGTON, New York: I should like to know whether the electric bulbs have an actinic effect. I think that a good deal of the effect of our municipal shower-baths is due to the cold air.

DR. GUY HINSDALE, Hot Springs, Va.: I believe that the principle of air-baths is one of the good elements in heliotherapy, supplementing the action of the sun-baths.

DR. C. F. GARDINER, Colorado Springs, Colo.: We do not get actinic rays from this type of lamp. I start with a temperature of about 90 degrees, and reduce it gradually to about 60.

The Incidence of Tuberculosis Among Potters

DR. H. R. M. LANDIS, Philadelphia: The dust of both clay and flint is gritty and somewhat irritating. While there has been very little histologic work done on lungs injured by these substances, a study has been made of those injured by coal-dust. The irritation is resisted for a time; but later, this resistance is overcome and the dust is carried into the lungs. Fibrous tissue is formed around these particles. This fibrous tissue is a protecting element against the entrance of tubercle bacilli. If such persons become tuberculous, it is usually after the common age period for that disease. There is also a tendency for such persons to live longer after acquiring tuberculosis than those who have not had this fibrosis beforehand. When they finally give up work, it is generally on account of dyspnea.

DISCUSSION

Dr. James M. Anders, Philadelphia: I have seen one such case in which the condition went on to actual cavity formation, yet no tubercle bacilli were found in the sputum. No matter how great the lesions in such cases, the diagnosis of tuberculosis cannot be made without the presence of the tubercle bacilli in the sputum.

Spontaneous Pneumothorax

Dr. Louis V. Hamman, Baltimore: I have seen a number of cases of pneumothorax coming on in otherwise healthy persons. In one case, this recurred once on the opposite side, and once on the same side. In four cases, the usual symptoms of pneumothorax were absent. They show how insidious the onset may be in some cases, and how easy it may be to overlook such a pneumothorax on casual examination, if this condition is not thought of. The cases ran a benign course, and the condition absolutely cleared up within a few weeks. They were probably due to adhesions of the pleura.

DISCUSSION

Dr. George W. Norris, Philadelphia: I am inclined to believe that this condition is not so rare as some suppose. A similar case that I treated cleared up in the same way.

Dr. G. Wilson, Baltimore: I had cases in two brothers. On bending over, they had pain. They walked to the office of their physician, who made a diagnosis and sent them to the state sanatorium. The sputum was negative in both cases, though their father had died of spinal tuberculosis. Both recovered completely and gained normal weight.

Dr. C. L. Minor, Asheville, N. C.: I have now under my charge a case of pneumothorax in a tuberculous patient, in which the prognosis is very grave. He came to me only because of shortness of breath, there being no pain; but I found the right lung infiltrated from top to bottom, and the left lung totally collapsed. It would be interesting to know whether cases of spontaneous pneumothorax are non-tuberculous or whether a large number of tuberculous cases have spontaneous pneumothorax, mostly unrecognized.

Dr. Robert C. Paterson, Ste. Agathe des Monts, Quebec: Two such cases came to my knowledge within two months of each other. One was tuberculous; in the other, there was slight thickening at the apex.

Dr. J. A. Miller, New York: I have seen only one case of recurrence in the same patient. After two recoveries, the condition recurred again. Fluid was withdrawn, and tubercle bacilli were found. Against the advice of his physician, a surgeon opened the chest. The cavity contained tubercle bacilli, but was sterile otherwise. Within a week after this, the patient developed sepsis and died. No necropsy could be obtained.

Dr. F. M. Pottenger, Los Angeles: I always suspect pneumothorax when there is a sudden shoot-up of a couple of degrees in the temperature. I consider this sign valuable in the diagnosis.

Dr. W. L. Dunn, Asheville, N. C.: For many years, I have examined all patients with the fluoroscope or a stereoscopic pair of plates, having examined in this way not less than two thousand patients; and it seems to me that the condition would have been rather frequently observed in these cases, if it were of frequent occurrence—certainly, if it is frequently associated with a small amount of disease.

Dr. L. V. Hamman: The commonest mechanism in the production of pneumothorax in early cases is the rupture of a small tuberculous lesion situated near the pleura, produced by the pulling of adhesions.

Heliotherapy in the Treatment of Bone and Joint Tuberculosis

Dr. John W. Brannan, New York: The treatment is begun with short exposures, until pigmentation of the skin appears. With the development of pigmentation, the cure progresses until completed. Pigmentation gives the skin resistance and favors cicatrization of wounds. At first, it was thought that heliotherapy could be carried out only at high altitudes, but later it was discovered that it is possible to carry it out at the sea level. At Sea Breeze, on Staten Island, the seat of the lesion is selected for the chief exposure. Other parts are also exposed, but entire exposure of the body is not often secured. A number of cases of sinuses of long standing have shown rapid improvement. The discharge may first be increased for a few days. Then a sequestrum of bone may be extruded, and finally the sinus closes. The general condition also improves greatly. Sometime it is necessary to interrupt the treatment, especially in blonde children, in whom pigmentation is of slow development. The best results are obtained with the smaller joints.

DISCUSSION

Dr. E. O. Otis, Boston: In 1912 I visted Rollier's sanatorium, and I never saw more healthy, rollicking children. Some of them had been operated on; but in every instance, their wounds were healing rapidly and their general condition was extraordinary.

Dr. C. L. Minor, Asheville, N. C.: Rollier always begins with the feet, wherever the trouble may be, and then gradually moves farther and farther up, until he exposes the whole body. I have not got beyond the knees, so far. It is very difficult, in this country, to get the opportunity to expose patients naked to the sun.

Dr. Thomas Darlington, New York: All these results were obtained where there is a great deal of moisture in the atmosphere. I do not believe they could be obtained, for instance, in Arizona, at a great elevation, with the strong direct rays of the sun, and with no moisture in the atmosphere. You can get too much sunlight.

Dr. C. F. Gardiner, Colorado Springs, Colo.: I have been using heliotherapy at an elevation of 6,000 feet, where the air is very dry, and have had no difficulty. We have several advantages in such a climate. There are more days on which we can expose the patients to the sun, and the rays that we receive are more efficient.

Dr. F. M. Pottenger, Los Angeles: In pulmonary cases, I have made similar exposures, using a large mirror covered with blue glass to concentrate the sun's rays on a focus 6 or 8 inches in diameter. It seems to me that the light has some influence of value. I do not see why we should begin at the ankles. I have seen no bad effects from starting with the chest. I wonder whether it is true that pigmentation is a necessity for the success of this method of treatment.

Dr. Charles C. Browning, Los Angeles: By means of this mirror, the entire body can be exposed at once: the front to the direct rays of the sun; and the back, to the rays reflected from the mirror behind the patient.

Dr. G. V. Hinsdale, Hot Springs, Va.: It is a mistake to think that Rollier confines his attention to surgical tuberculosis, or tuberculosis of the joints. Almost half of his cases are pulmonary. It is remarkable that while such stress is laid on pigmentation as an index of the value of the treatment, negroes, who easily acquire tuberculosis, rarely recover. Whether they would under this sort of treatment, we do not know, but they have natural pigmentation.

Dr. Brannan: Although you may not obtain quite as good results at the seashore as at the mountains, you must use the facilities you have. Men have obtained better results with heliotherapy at the seashore than they had obtained before, without its use.

Blood-Pressure Studies, with Especial Reference to the "Energy Index" and the "Cardiac Load"

Dr. George W. Norris and Dr. J. R. Davies, Philadelphia: These clinical blood-pressure studies were undertaken with a view of determining the possibility of estimating cardiac efficiency by means of the two indexes mentioned above. The energy index is established by multiplying the combined systolic and diastolic pressure by the pulse-rate per minute. The cardiac load is estimated by dividing the diastolic into the pulse-pressure. We do not feel that either

of these methods offers any special advantage over the routine examinations by other methods. The two methods differ, not only quantitatively, but also qualitatively. They are more valuable in the study of a given case than in contrasting cases. The observation of the diastolic pressure, which can be done very accurately by means of the auscultatory method, is more valuable than the observation of the diastolic pressure. The two, however, should be combined.

How Shall We Tell Whether the Myocardium Is Competent?

DR. JOHN M. SWAN, Rochester, N. Y.: The following tests have been advocated: Taking the difference in the pulse-rate between the recumbent and the erect posture; taking the second phase (murmur phase) of the auscultatory blood-pressure observation; finding the increase in systolic blood-pressure on constricting the femoral arteries, and determining the cardiac efficiency factor of Tiegerstedt. I have endeavored, from these, to make a prognosis of the competency of the myocardium in a number of cases. From my studies of these cases, it seems to me legitimate to conclude that all four factors have some value in determining the efficiency of the myocardium. The cardiac efficiency factor of Tiegerstedt and the second phase of the auscultatory blood-pressure observation are the most important. A cardiac efficiency factor of 40 per cent. or over would seem to point to distinct myocardial inefficiency. A second phase of 30 per cent. or under would seem to indicate the same condition.

Influence of Pilocarpin on the Blood-Pressure

DR. W. D. ROBINSON, Philadelphia: In intelligently selected cases of hypertension, pilocarpin has not failed to be of value. In many instances, indeed, it is of very great value. The therapeutic dangers usually accredited to this drug have not been encountered in the modified doses in which I have used it.

The Comparative Value of the von Pirquet and the Subcutaneous Tuberculin Tests in the Diagnosis of Tuberculosis in the Adult

DR. HUGH M. KINGHORN, Saranac Lake, N. Y.: There are three kinds of reaction that may be obtained: a general reaction, focal reaction and a local reaction. The patient usually describes the general reaction as feeling like an attack of grip. The focal reaction always occurs, but is not always to be detected by the most minute examination. There is never any local reaction in a healthy person, and it may or may not occur in the tuberculous. It consists in swelling and redness. Without the presence of fever, we are not justified in saying that a general reaction has occurred. An elevation of 0.9 F. constitutes a definite tuberculin reaction. The von Pirquet cutaneous reaction is less specific in the adult than is the subcutaneous test. In children, however, the von Pirquet reaction is the one of choice. Koch's subcutaneous tuberculin reaction is specific. A positive subcutaneous reaction is of importance only in cases that are clinically suspicious of tuberculosis. In these cases, a positive reaction probably points to an active tuberculous focus. In the adult, the subcutaneous tuberculin test is the most reliable one and the one of choice, as all of the clinically suspected cases reacted to it; the von Pirquet test, although not so accurate, is of great importance. Eighty-one per cent. of the cases in which it was used reacted positively.

DISCUSSION

DR. L. V. HAMMAN, Baltimore: I do not believe that the tuberculin test differentiates between tuberculous and healthy persons, if the term "tuberculous" is used in a clinical sense. The subcutaneous test is the most valuable.

DR. F. M. POTTENGER, Los Angeles: The tuberculin test is of value in the differentiation between active and inactive tuberculosis. I have found that in those cases in which, from a careful clinical history and physical examination, I have decided that active tuberculosis must be present, a prompt von Pirquet reaction followed in 30 per cent.

DR. CLEAVELAND FLOYD, Boston: The difference between the tests is merely a differentiation of the susceptibility of the patient to tuberculin. I do think you can say that you can tell active tuberculosis by one of these tests, and not by the other.

DR. C. L. MINOR, Asheville, N. C.: The von Pirquet test is considered to be an evidence of existing tuberculosis, but not of active tuberculosis. Its use is to be discouraged in adults.

Differential Diagnosis of Mild Thyroid Toxemia and Incipient Pulmonary Tuberculosis

DR. C. G. JENNINGS, Detroit: Mild thyroid toxemia may closely resemble incipient pulmonary tuberculosis. The following symptoms are often common to both: mild chronic pyrexia, tachycardia, debility, shortness of breath, indigestion and cough. The differential diagnosis will be made by a study of the temperature curve, the peculiarities of the tachycardia, the nervous phenomena, the derangements of digestion and metabolism, the physical examination, and the roentgenographic findings.

DISCUSSION

DR. J. M. SWAN, Rochester, N. Y.: Disturbances of the ductless glands are quite common at Rochester, as it is only 6 miles from Lake Ontario. Diarrhea is a fairly common symptom among these patients, many of them losing weight; but there is no evidence of pulmonary involvement. I have found sirup of iodid of iron and quinin hydrobromate valuable remedies in these cases. I never use thyroid extract.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

June, LXIX, No. 6, pp. 909-1140

1 *Review of Five Hundred Cases of Abdominal Cesarean Section for Eclampsia. R. Peterson, Ann Arbor, Mich.
2 Pathology and Treatment of Gonorrheal Cervicitis and Endometritis. J. G. Clark, Philadelphia.
3 Therapeutic Value of the Roentgen Ray and Radio-Active Substances in Carcinoma of Uterus. I. C. Rubin, New York.
4 Two Cases of Post-Partum Inversion of Uterus, with Discussion of Pathogenesis of Obstetric Inversion. W. C. Jones, Chicago.
5 When Is It Justifiable to Terminate Pregnancy before Third Month? What Should Our Attitude Be toward a Patient on Whom Criminal Operation Has Been Performed? Toward Those Suspected of Performance of Criminal Operations? W. R. Nicholson, Philadelphia.
6 Calcareous Shell in External Iliac Vein Twenty Years after Puerperal Phlebitis. G. E. Shoemaker, Philadelphia.
7 *Clinical Malignancy of Pseudomucinous Cystadenoma of Ovary. S. Wiener, New York.
8 Vesicovaginal Fistula in Child Eight Years Old: Spontaneous Cure Following Removal of Hairpin. I. C. Rubin, New York.
9 Unusual Case of Congenital Defect; Absence of Eyeballs. M. Strong, Omaha.

1. **Abdominal Cesarean Section for Eclampsia.**—The 500 cases of abdominal cesarean section analyzed by Peterson represent the work of 259 operators all over the world. Between 1908 and 1913 there were 283 cases of eclampsia treated by abdominal cesarean section with 73 deaths or a maternal mortality of 25.79 per cent. Up to 1908 there were 198 cases with 95 deaths or a mortality of 47.97 per cent. Peterson believes that the mortality percentage can be considerably lowered by care in technic and by not making use of the suprapubic route when there is great probability that the woman has been infected from below. Nearly one-fifth of the entire series, 91 operations, were performed by thirteen men having 5 or more cases to their credit, with 17 deaths or a maternal mortality of 18.68 per cent. Deducting 15 cases in which the proportion between moribund and septic patients was very high, the remaining 76 cases with 10 deaths give a maternal mortality of 13.15 per cent. Convulsions ceased after abdominal cesarean section in 251 out

of 457 cases or in 54.92 per cent. In 146 cases in which the convulsions ceased after abdominal cesarean section during the five year period (1908-1913) there were 41 deaths or a maternal mortality of 19.8 per cent. While the above percentage of patients died after emptying the uterus by abdominal cesarean section after cessation of the convulsions the mortality is much less than in those in which the convulsions continue, since in 130 of such cases there were 41 deaths or a maternal mortality of 31.53 per cent.

Peterson claims that the operative treatment of eclampsia has never been given a fair trial. To do this the uterus should be emptied quickly, as soon as possible after the onset of the first convulsion, not emptied after all kinds of medicinal treatment have been tried and failed. In the present series there were 25 deaths after 124 operations performed after one to five convulsions or a maternal mortality of 20.32 per cent. In 60 of the 124 cases in which the operations were performed after from one to five convulsions in which no or only one or two vaginal examinations had been made and in which no attempts were made to deliver from below there were only 9 deaths or a maternal mortality of 15 per cent. The increase in mortality due to delay is shown by a mortality of 30.33 per cent. in which the operations were performed after the sixth convulsion. This is 10 per cent. higher than after quick delivery and 5 per cent. higher than the total mortality resulting during the same period (1908-1913). In 60 cases in which the convulsions ceased after operations performed after from one to five convulsions there were 8 deaths or a maternal mortality of 13.33 per cent. The mortality is twice as high (26.92 per cent.) after the operations performed under the same conditions, except that the convulsions continued. When the abdominal cesarean sections were performed after more than five convulsions there was a resulting mortality of 26.31 per cent. in which there was cessation of the convulsions, 36.36 per cent. in which they continued.

Twins occurred 21 times in 500 cases of abdominal cesarean section for eclampsia or in 4.02 per cent. of the cases. This is over three times as frequent as are twins in normal cases. Excluding premature children and counting all children as living who survived one hour after delivery there were 9 deaths from 1908 to 1913 in which 248 children were delivered by abdominal cesarean section or a fetal mortality of 3.62 per cent. Under the same conditions the fetal mortality was 10.69 per cent., if children dying the first three days after delivery be counted among the deaths.

In 474 patients with eclampsia in the present series, 83.75 per cent. were primipara and 16.17 per cent multipara. In 225 primipara the maternal mortality was 24.44 per cent. while in 48 multipara the mortality was 27.08 per cent. The maternal mortality in eclampsia after abdominal cesarean section steadily increases with the age of the patients, it being 23.63 per cent. between the ages 16 and 20 and 31.11 per cent. between the ages of 31 and 35. The high death rate of abdominal cesarean section after operative procedures is shown by the fact that there were 10 deaths in 29 such cases, or a maternal mortality of 34.48 per cent. This 9 per cent. increase in mortality over the total mortality (25.79 per cent.) during the same period was undoubtedly due to sepsis, shock and delay in emptying the uterus. The mortality is distinctly higher after abdominal cesarean section in eclampsia if vaginal examinations have been made prior to the operations. The danger increases directly with the number of examinations made and the lack of asepsis employed.

7. **Pseudomucinous Cystadenoma of Ovary.**—One-third of all proliferating ovarian tumors Wiener states, are frankly malignant, the other two-thirds are all potentially malignant. The final estimation of malignancy must be clinical. The usual method in which histologically benign tumors cause death is by perforation of the capsule, extravasation of contents, and peritoneal metastases. Every ovarian tumor should be removed by laparotomy as soon as discovered, unless there be an absolute contra-indication to operation. Whenever at all feasible, cysts should be removed intact, without attempt at reduction in size by puncture. When spontaneous rupture of a cyst has occurred, the earlier the operation the better the prognosis. In removing a unilateral ovarian cyst, other than one which is frankly malignant or one which shows extensive papillomatous changes, the other ovary should be left *in situ* if its macroscopic appearance be normal. Every patient who has had a unilateral oophorectomy for cystadenoma should be subjected to periodical reexamination for disease of the remaining ovary.

American Journal of Public Health, Boston

June, IV, No. 6, pp. 477-552

10 Lead-Poisoning in United States. A. Hamilton, Chicago.
11 Industrial Hygiene. Neglected Field of Public Health Work. C. T. Graham-Rogers, New York.
12 Bacteriologic Standardization of Disinfectants. H. C. Hamilton and T. Ohno, Detroit.
13 Single Tax in Relation to Public Health. L. J. Johnson, Boston.
14 Wakefield and Stoneham Epidemic Sore Throat. F. L. Morse, Somerville.
15 Flies and Filth. S. Miller, Malden.
16 Outline Program for Teaching Sex Hygiene in Schools. R. N. Willson, Philadelphia.
17 Protest against 37 C. Requirement for Bacterial Counts. H. W. Hill, London, Ontario.

American Journal of Roentgenology, Detroit

April, I, No. 6, pp. 233-286

18 Roentgen Diagnosis of Gastric Ulcer. R. D. Carman, Richgster, Minn.
19 *Chronic Typhoid Periostitis. H. W. Dachtler, Toledo, Ohio.
20 Roentgenograms W. H. Stewart, New York.
21 Roentgen-Ray Equipment and Work in Army at Present Time. W. A. Duncan, U. S. Army.
22 Possibility of Estimating Dosage and Penetration. W. S. Newcomet, Philadelphia.

19. Abstracted in THE JOURNAL, Nov. 8, 1913, p. 1742.

Annals of Surgery, Philadelphia

June, LIX, No. 6, pp. 805-991

23 *Prophylaxis of Cancer. W. J. Mayo, Rochester, Minn.
24 Two Fatal Cases of Systemic Plastomycosis. C. A. Powers, Denver.
25 *Value of Gluzinski's Test in Diagnosis of Gastric Ulcer. J. Nicolaysen, Christiania, Norway.
26 *Method of Subtotal Gastrectomy. F. T. Stewart, Philadelphia.
27 *Function of Gastro-Enterostomy Opening in Cases of Permeable Pylorus. H. Hartmann, Paris.
28 Chronic Pancreatitis. J. B. Deaver and D. B. Pfeiffer, Philadelphia.
29 Suggestions Regarding Anatomy of and Surgical Technic in Treatment of Jonnesco's Membrane. J. E. Summers, Omaha.
30 *Bullet in Pericardium. G. E. Armstrong, Montreal.
31 Fourteen Cases of Pulmonary Abscess and Bronchiectasis. H. Lilienthal, New York.
32 Two Cases of Visceral Pleurectomy for Chronic Empyema. C. H. Mayo and E. H. Beckman, Rochester, Minn.
33 Pleural and Pulmonary Complications of Tropic Abscess of Liver. Review of Twenty-Seven Cases. J. E. Thompson, Galveston, Tex.
34 *Causal Relation of Traumatism to Tuberculosis. J. C. DaCosta, Philadelphia.
35 *Uncomplicated Tuberculous Foci in Bones and Their Treatment. T. W. Huntington, San Francisco.
36 *Frontal Sinus Suppuration. H. A. Lothrop, Boston.
37 Blepharoplasty by Pregrafted Flap. C. Gibson, New York.
38 Successful Case of Ligation of Innominate Artery. C. A. Hamann, Cleveland.
39 Distant Results of Suture of Heart Following Wound by Pistol-Shot. R. Proust, Paris.
40 Review of Ninety-Nine Arthrotomies for Fracture of Patella. H. B. Delatour, Brooklyn.

23. **Prophylaxis of Cancer.**—Mayo emphasizes the fact that preexisting lesions play the most important part of the known factors which surround the development of cancer, that such precancerous lesions are produced by some habit or life condition which causes chronic irritation, that where cancer in the human is frequent, a close study of the habits of civilized man as contrasted with primitive races and lower animals, in which similar lesions are conspicuously rare, may be of value, and finally, that the prophylaxis of cancer depends, first, on a change in those cancer-producing habits and, second, on the early removal of all precancerous lesions and sources of chronic irritation.

25. **Value of Gluzinski's Test.**—Gluzinski's working hypothesis is as follows: An ulcer situated in the pyloric portion being the cause of retention is, as a rule, accompanied

by hyperacidity of the contents, while a cancer is attended by a mucous (or atrophic) catarrh which causes a disappearance of the free hydrochloric acid. During the transformation of an ulcer into a cancer there will yet be found free hydrochloric acid up to a certain stage of the disease. But during the progress of the mucous catarrh there will occur a secretory insufficiency which may be demonstrated by giving two test-meals, one meal following immediately on the other. The stomach is washed out before and after the first meal and the second meal is given immediately after the second washing. In ulcer both the breakfast as well as the dinner give distinct reaction of free HCl. In beginning cancer the first meal also will give distinct reaction of free HCl, while the second one will show only a slight trace, or free HCl will be altogether absent.

Kocher by determining the percentage of free HCl in the two meals found that the free acid is present in larger quantities after the second meal in ulcer, while in cancer this meal (the test dinner) shows the lowest percentage of hydrochloric acid. In 30 cases of ulcer tested according to this modified Gluzinski method, the diagnosis was verified at operation in 27 cases, in 2 cases the result was uncertain and in 1 case there was found carcinomatous degeneration of an ulcer.

At the surgical clinic of Christiania University Nicolaysen has employed the Gluzinski method since October, 1912, in the examination of 86 cases, to wit: 25 cases of gastric ulcer, 9 cases of duodenal ulcer, 21 cases of cancer of the stomach, 15 cases of gastro-enteroptosis, 11 cases of chronic appendicitis and 5 cases of gall-stones. The diagnosis is in all of the cases controlled by operation, some of the ptosis cases only by roentgenogram. Of the cancer cases two only had free hydrochloric acid and in both the test agreed with the results as obtained by Gluzinski, to wit: a decreasing amount of free hydrochloric acid in the test dinner. In those cases of cancer of the stomach where free hydrochloric acid was absent Nicolaysen found no regular decrease of the total acidity; in fact, the total acidity was increasing in the second test-meal in about 50 per cent. of the cases.

During further examinations he arrived at the conclusion, however, that the percentage of free HCl may decrease in the second meal also in diseased conditions of the gastro-intestinal canal other than cancer of the stomach.

He found the free hydrochloric acid values to be diminishing in the test dinner in cases of gastro-enteroptosis. By examining 25 cases of gastric ulcer he found that all of them but one reacted in the manner described by Gluzinski and Kocher as being characteristic of ulcers of the stomach, to wit: with a decided increase in the percentage of the hydrochloric acid and of the total acidity. In 9 cases of duodenal ulcer the hydrochloric acid values were not as high as in gastric ulcer and the increase in the percentage of free acid in the second meal was moderate in 7 cases, while it was relatively great in two cases.

But the difference in this respect between gastric and duodenal ulcer is not great enough to be made use of as a means of differential diagnosis. In Nicolaysen's opinion Gluzinski's method is better than any other for testing the secretorial function of the stomach.

26. **Subtotal Gastrectomy.**—The method of subtotal gastrectomy described by Stewart consists in removing the diseased segment of stomach from left to right, after performing an end-to-side anatomosis between the lower portion of the incision, which amputates the stomach and the upper part of the jejunum, the operation being so conducted that the suturing necessary to unite the stomach to the intestine is completed before either viscus is opened.

27. **Gastro-Enterostomy with Permeable Pylorus.**—Dog experiments and roentgenographic examinations by Hartmann showed that, in opposition to the general opinion, the gastro-intestinal anastomosis may work even in cases in which the pylorus is patulous.

30. **Bullet in Pericardium.**—In the case cited by Armstrong the assailant used a 32 caliber revolver and stood in front of the patient and about 5 feet away. The patient was dazed for a moment and then recovered and pursued his assailant, but was unable to run far on account of weakness. There was a small punctured wound opposite to the third intercostal and slightly to the left of the border of the sternum, no staining or charring of the skin and but little tenderness on pressure, no discharge from the wound and very little discomfort on taking a full breath. The chest was emphysematous, but there was no evidence of pneumothorax or of air or blood in the pericardium, no murmurs nor friction rub. A fluoroscopic examination of the chest showed the bullet lying loose in the pericardium, moving with each heart beat, and changing its position with the changing position of the patient. During the succeeding four or five days, the only changes to be noted were increasing irregularity of the pulse and a change in his general condition. The temperature elevation was not great, a hundred and two-fifths was the highest. The change in the pulse was definite. It became more rapid, more irregular, and smaller and more compressible. A tracing showed complete auricular fibrillation. A radical tracing showed an irregularity both in volume and rhythm. In the afternoon of the fifth day Armstrong removed the bullet.

Throughout the operation the pulse retained the same characteristics and a rate of 130 to 140, varying slightly throughout the anesthesia. After the bullet was removed and before the pericardium was sutured the pulse obviously quieted and the rate was 120 at the carotid. Two and a half hours after the operation the pulse was 105 and perfectly regular. Armstrong emphasizes the following points: 1. Onset of auricular fibrillation in a heart where, as far as could be ascertained, there had been no previous inflammatory mischief, no symptoms of any cardiac involvement, due to the presence of a foreign body. 2. Cessation of the disorderly rhythm on the removal of the cause—the bullet.

34. **Traumatism and Tuberculosis.**—DaCosta believes that it is as certain as many things medical can be that traumatism is often a determining cause of bone and articular tuberculosis and sometimes of tuberculosis in other regions. He has seen many cases which he regards as traumatic tuberculosis of bones and of joints, and a number of cases of traumatic tuberculosis of tendon sheaths. He has also seen a number of cases of traumatic tuberculosis in the knee, foot and wrist, and several in the hip. He has seen tuberculosis of the inguinal glands after a kick, tuberculosis of the epididymis after a bruise, tuberculosis of the kidney after contusion of that organ, and tuberculosis of the mammary gland after a blow. To deny the possibility of traumatic tuberculosis, he states, is to deny many of the truths of pathology and some of the plainest lessons of clinical surgery.

35. **Tuberculosis Foci in Bones.**—To leave an accessible tuberculous bone focus, whether isolated or not, to smoulder until provoked to renewed activity at a later period, Huntington states, is without justification, and seems to do violence to surgical principles. He insists that in the acute, fulminating cases delay for any purpose is extremely hazardous, and that to this type, if to no other, early incision and evacuation offers peculiar advantages. The objects to be obtained by early, direct interference are: (*a*) permanent cure by elimination of the focus; (*b*) reduction of time of treatment from years to months; (*c*) prevention of complications, such as abscess formation, mixed infection, disintegration of bone and joint strustures, crippling deformity and loss of function; (*d*) avoidance of systemic invasion and loss of life. If the disease has extended from its original location across the epiphyseal cartilage not much respect need be paid to it; if in the remote side it will naturally be preserved. Utmost care must be exercised to avoid perforation of the cortex so as to communicate with the synovial cavity.

The resulting chamber may be dealt with variously. Huntington has generally depended on camphor phenol gauze packing (phenol one part, gum camphor three parts). The gauze is wrung dry and closely packed into the cavity. A few days later the amount of gauze is lessened and a little

later is discarded. Such wounds heal rapidly and all discharge ceases in less than a fortnight under an aseptic dressing. After removal of the initial dressing the cavity is usually free from blood, and can be filled with Beck's paste or the Mosetig-Moorhof wax. The wound may then be closed in the usual manner and fixation secured by a rather loosely applied plaster-of-Paris dressing. Huntington reports sixteen cases in which he has pursued the plan described.

36. **Frontal Sinus Suppuration.**—After the vicinity of the ostium has been enlarged to as great an extent as the anatomy will allow, Lothrop sutures the edge of the skin of the upper lid to the periosteum on the outer edge of the bony opening into the sinus with small catgut; then an oval incision is made in the lid down to the muscle fibers, so as to form a flap about the size of the opening in the bone. The blood-supply of the lid is excellent and the flap is very movable so that it turns readily without much cutting after division of the thin skin of the lid. The flap is now to be turned so as to cover the bony opening and is sutured to periosteum, preferably with fine chromicized catgut. Then the parts are washed carefully with a sterile solution and the remaining wound is closed. The lid is drawn across horizontally and there is very little tension and subsequent edema, and the motion of the lid is not interfered with. In two instances where the sinus was grafted, the scar is scarcely perceptible in one and in the other the depression is moderate and is due to the previous extensive destruction of bone.

Archives of Pediatrics, New York

June, XXXI, No. 6, pp. 401-480

41 Organized Cooperation in Infant-Welfare Work. G. Smith, New York.
42 Still's Disease and Arthritis Deformans. J. B. Manning and F. J. Fassett, Seattle, Wash.

Arizona Medical Journal, Phoenix

June, II, No. 5, pp. 5-15

43 Tuberculosis and Protein Sensitization. A. D. Wilson, Prescott.

Boston Medical and Surgical Journal

July 9, CLXXI, No. 2, pp. 49-88

44 *Acute Abscess and Gangrene of Lung. I. J. Walker, Boston.
45 Scabies in Boston. F. M. Painter, Boston.
46 Anatomy and Physiology of Seminal Vesicles with Regard to Treatment of Their Lesions. W. C. Quinby, Boston.
47 Pathology of Seminal Vesicles. J. D. Barney, Boston.
48 Arthritis Associated with Lesions of Genito-Urinary Tract. E. G. Brackett, Boston.
49 Three Cases of Erythema Group. H. Morrison, Boston.

44. **Acute Abscess and Gangrene of Lung.**—The following statistics on abscess and gangrene of the lung are the result of a review of the literature of the last ten years by Walker. Total number of cases of acute abscess of the lung, 132; males, 98; females, 32; sex not mentioned, 2. Total number of cases of acute gangrene, 40; males, 27; females, 5; sex not mentioned, 8. Average age in cases of acute abscess, 24.5 years; in cases of acute gangrene, 38.6 years. In acute abscess of the lung, the right side of the chest was involved in 60 cases, the left in 45, both sides in 5 cases; side not mentioned in 22 cases.

In gangrene, the right side of the chest was involved in 21 cases, the left side in 9 cases, both sides in 2 cases; sides not mentioned in 8 cases. In acute abscess the lobes were found to be involved as follows: upper, 21 times; lower, 76 times; middle, twice; both upper and lower, 5 times. In 28 cases the lobe was not mentioned. In acute gangrene: upper, 10 times; lower, 24; middle, none; both upper and lower, 6 times. In acute abscess cases, adhesions were present in 63, absent in 2, not mentioned in 57. In acute gangrene, they were present in 17 cases; not mentioned in 23 cases. In 104 cases of acute abscess the lesions were single, multiple in 16, not mentioned in 12. The mortality in cases of acute abscess treated medically was 54 per cent.; in those treated surgically, 25 per cent. The mortality in cases of gangrene treated medically in 89 per cent.; those treated surgically, 44 per cent.

Cleveland Medical Journal

June, XIII, No. 6, pp. 375-446

50 Neanderthal Man. T. W. Todd, Cleveland.
51 Labeling Vice. S. W. Kelley, Cleveland.
52 *Abderhalden Serologic Test for Pregnancy—Preliminary Report of One Hundred and Fifty Cases. W. C. Stoner and A. J. Skeel, Cleveland.
53 Two Cases of Cardiospasm. J. D. Osmond, Cleveland.
54 History of Physiology of Nervous System. R. G. Pearce, Cleveland.
55 Atresia Rectovesicalis—Report of Successfully Operative Case. F. C. Herrick, Cleveland.

52. **Abderhalden Test for Pregnancy.**—Of 78 cases examined by Stoner and Skeel in which a clinical diagnosis of pregnancy was established, only one reacted negatively. The blood was obtained throughout the pregnant period from one month up to full term. Of 8 post-partum cases in which the blood was obtained from one day to three weeks subsequent to delivery, all reacted positively. Of 68 non-pregnant cases, 8 were clinically diagnosed cancer, 6 of which gave a positive reaction to both placental and cancer tissue and 2 gave a negative reaction to both. Two cases of fibroid tumor of the uterus were positive and one was negative. The non-pregnant cases included a variety of clinical conditions aside from cancer, fibroid tumor and pelvic inflammatory cases, all of which gave negative reactions, save four cases in which the control tube gave a reaction also, showing faulty technic in the way of old blood, unclean glassware and failure to use toluol. Four urines of pregnant patients gave reaction in No. 1, and two tubes, but No. 1 tube was much more intense, showing the presence of a normal dialyzable protein in urine and probably a ferment due to pregnancy. Pregnant rabbit blood on both human and rabbit placenta was positive and non-pregnant rabbit blood on human placenta was negative. Eleven cases were syphilitic and gave a positive Wassermann, but the Abderhalden was negative. Eclampsia and threatened eclampsia cases showed positive reactions with usual intensity.

Colorado Medicine, Denver

June, XI, No. 5, pp. 213-242

56 Surgical Treatment of Thoracic Empyema. C. E. Tennant, Denver.
57 Art of Obstetrics among Primitive Peoples and Its Development among Civilized Classes. C. B. Ingraham, Denver.
58 Apapnia—Its Relation to Anesthesia and Surgery. C. G. Parons, Denver.
59 Anesthetization—Anesthetizer and Surgeon. R. L. Charles, Denver.

Delaware State Medical Journal, Wilmington

May, V, No. 6, pp. 1-26

60 How Should We Advise Our Ruptured Patients? B. R. Veasey, Wilmington.

Journal-Lancet, Minneapolis

July 1, XXXIV, No. 13, pp. 347-370

61 *Experimental Data on Intramuscular Administration of Antisyphilitic Drugs. H. E. Robertson, Minneapolis.
62 Incubus Nocturnus: Leaf from Doctor's Day-Book. D. V. Gleysteen, Lamberton.
63 Shakespeare as Physician. H. E. Day, Minneapolis.
64 Case of Retractile Mesosigmoiditis. F. R. Wright, Minneapolis.

61. **Intramuscular Administration of Antisyphilitic Drugs.**—Robertson states that intramuscular injections of salvarsan and neosalvarsan uniformly produce severe destructive lesions which always heal slowly and often are complicated by hemorrhages and sloughing abscesses. The severity of the reaction from the use of either drug is essentially the same. Salvarsan always leaves an insoluble pigment which acts as a foreign body. Mercurical preparations when injected into muscles produce similar lesions. The lesions produced by experiments on animals and in human beings are similar in every respect. Robertson regards the use of such preparations in this manner as an unjustifiable procedure in certainly the majority of cases.

Journal of Nervous and Mental Disease, Lancaster, Pa.

June, XLI, No. 6, pp. 345-416

65 Dementia Praecox in Eighth Edition of Kraepelin's Text-Book. H. D. Singer, Hospital, Ill.
66 Case of Aneurysms of Vessels of Brain. J. H. W. Rhein, Philadelphia.
67 Case of Progressive Lenticular Degeneration. E. M. Auer, Kalamazoo, Mich.

Kentucky Medical Journal, Bowling Green

June 15, XII, No. 12, pp. 365-398

68 Manual Removal of Placenta and Membranes. W. B. Gossett, Louisville.
69 Surgical Judgment in Operations for Acute Mastoiditis. G. C. Hall, Louisville.
70 Excision of Tarsal Cartilage and Conjunctiva in Old Trachoma. C. T. Wolfe, Louisville.
71 Vesical Calculi. Report of Case. E. S. Allen, Louisville.
72 Fracture of Pelvis and Separation of Sacro-Iliac Joint. W. B. Owen, Louisville.
73 Ruptured Ovarian Cyst. Report of Case. B. F. Zimmerman, Louisville.
74 Fracture of Internal Condyle of Femur Treated with Wire Nails. Report of Case. C. B. Spalding, Louisville.
75 Eclampsia. Report of Case. B. J. O'Connor, Louisville.
76 Two Cases of Hodgkin's Disease. F. C. Askenstedt, Louisville.
77 Typhoid. J. F. Adams, Bagdad.
78 Relationship of Physician to Public. W. F. Boggess, Louisville.

Maine Medical Association Journal, Portland

June, IV, No. 11, pp. 1883-1923

79 Feeding of Infants and Some Diseases of Gastro-Enteric Tract in Infancy. J. L. Morse, Boston.
80 State Care and Training of Feeble-Minded in Maine. C. J. Hedin, West Pownal.
81 Penetrating Gunshot Wound of Gravid Uterus. Case Report. R. A. Holland, Calais.

Medical Record, New York

July 11, LXXXVI, No. 2, pp. 49-94

82 *Treatment of Diseases of Vegetable Parasitic Origin by Deep Muscular Injections of Mercury. B. L. Wright, U. S. Navy.
83 Some Radium Therapeutics. J. B. Bissell, New York.
84 Cow's Milk, Raw and Heated. E. W. Titus, Washington, D. C.
85 Pharyngeal Tonsil in Adult. L. G. Kaempfer, New York.
86 Case of Auricular Flutter Occurring During Rheumatic Endocarditis. S. Neubof, New York.
87 Modified and Conservative Radical Mastoid Operations for Tolerance of Prostheses in Cases of Diminished Hearing after Middle-Ear Suppuration. W. S. Bryant, New York.
88 Mental and Nervous Manifestations of Pellagra. T. Frazer, Asheville, N. C.
89 Physiology of Abderhalden's Test and Its Value in Determination of Pregnancy with Table of Ninety Cases. K. H. Goldstone, Brooklyn.

82. **Treatment of Diseases of Vegetable Parasitic Origin with Mercury.**—On the basis that mercury is the chemical affinity of the entire group of the vegetable parasites, Wright advises its use in various conditions. In the early days of an acute infectious disease Wright states the maximun dosage of mercuric succinimide is solely indicated, while in the late days of these diseases, or in subacute or chronic infections smaller and more numerous injections are to be used. During the early days of an average acute infection in an average adult male, the initial dose of mercuric succinimide should be gr. 9/5; if at the end of twenty-four or thirty-six hours there has been no improvement, or if, following improvement, there has been a return of symptoms, a second injection of from gr. 5/5 to gr. 6/5 should be given, providing symptoms of mercurialism have not followed the first injection. In the more virulent and quickly fatal of the acute infections, such as meningitis, whatsoever its etiology, the initial dose should be gr. ii. In chronic infections (late days of acute and in subacute infections) in the average adult male the initial dose should be gr. 5/5 to gr. 7/5. Succeeding injections should then be given with from two to four day intervals, in such dosage as will not produce mercurialism, until ten or twelve injections have been given, providing the symptoms have not disappeared in the mean time. When ten or twelve injections have been given, the treatment should be interrupted for from two to five weeks, in order that the mercury may be eliminated and that the organisms may not become immune to its action through its constant presence in their environment.

In some of the more persistently chronic infections the interval of time between injections should be from four to eight days. In females the dosage should average from gr. 1/5 to gr. 2/5 less than in males. Should symptoms of mercurialism appear at any time during the course of treatment the injections should be stopped at once and appropriate corrective measures applied, the injections being resumed if necessary on the disappearance of these symptoms.

During this treatment the oral cavity and the teeth must have the utmost attention and be kept perfectly clean at all times, and the bowels moved freely daily. Surgical asepsis must be carefully observed in every particular relating to syringe, needles, solution and skin at site of injection.

The solution should be made of the strength of mercuric succinimide gr. 1/5 in sterile, distilled water ℥iv. Inject deeply in gluteal muscles. The only contra-indication to this method that Wright knows of is serious organic lesions of the kidneys. He has used this method of treatment in 35 cases of tuberculosis, 9 cases of lobar and 6 cases of lobular pneumonia; 5 cases of typhoid, 1 of paratyphoid, 1 of meningitis, 2 of erysipelas, 39 cases of infectious arthritis, 24 of gonorrheal arthritis and 7 of chronic articular rheumatism.

New Mexico Medical Journal, Las Cruces

June, XII, No. 3, pp. 65-100

90 Constitution of Proteids. E. S. Bullock, Silver City.
91 Management of Woman and Child during Puerperium. W. P. Mills, East Las Vegas.
92 Vincent's Angina. H. Letord, El Paso, Tex.
93 Final Report on Epidemic of Typhus Fever among Navajo Indians at Canoncito Cojo. L. C. Day, Albuquerque.

New Orleans Medical and Surgical Journal

June, LXVI, No. 12, pp. 885-1008

94 Philosophic Anatomy of Kidneys. E. Souchon, New Orleans.
95 Operative Treatment of Jacksonian Epilepsy. C. W. Allen, New Orleans.
96 Epidemiology of Whooping-Cough. H. D. King, New Orleans.
97 Cases of Obstruction of Bowels. E. D. Martin, New Orleans.

July, No. 1, pp. 1-94

98 Gunshot Wounds of Abdomen. L. B. Crawford, New Orleans.
99 Postoperative Management of Surgical Cases. E. D. Martin, New Orleans.
100 *Mosquitoes. Rôle of Certain Species in Prevention of Malaria. H. Byrd, Princeton, Fla.
101 *Remedy for Boils and Skin Infections. C. W. Allen, New Orleans.

100. **Mosquitoes. Rôle of Certain Species.**—Other things being equal, Bryd states, the prevalence of malaria in a given locality bears an inverse ratio to the abundance of salt-marsh mosquitoes. This proposition has two important corollaries: (a) That in Florida, at least, in which nearly all cases of typhoid are the result of fly convection, this disease is reduced to a marked degree by the prevalence of salt-marsh mosquitoes; for protection against mosquitoes gives partial protection against flies. (b) In which other species of mosquitoes that do not transmit disease prevail in such numbers, and with such ferocity, as to cause the inhabitants to resort to efficient screening, and other protective measures, the prevalence of malaria and of typhoid are reduced accordingly. A notable example of this is found in Lake County, about Eustis and Tavares, in which the *Culex perturbans* is at times a veritable pest. Here there is such freedom from malaria that there is a wide-spread belief, or at least was four or five years ago, that people will not take malaria in districts in which there are pines.

101. **Remedy for Boils and Skin Infections.**—In his own case Allen used a freshly prepared dilute nitro-muriatic acid, 10 to 15 drops in water after each meal. In a few days he could note some apparent improvement and soon realized that he was getting better; well-developed lesions soon disappeared and those in process of development were aborted. During its use Allen has seen many lesions started in a hair follicle, which in the past would have promised much trouble for him, disappear in a few days. He is also thoroughly convinced of one other fact, contrary to the usually accepted surgical views, which is that boils and superficial skin infections do better when not opened. Should they come to a head and point they can easily be evacuated but their incision accomplishes nothing in shortening their course or lessening their pain; on the contrary, it seemed at times to prolong their duration and to add to the violence of the inflammatory reaction.

New York Medical Journal

July 11, C, No. 2, pp. 61-108

102 Treatment of Summer Diarrheas of Children. F. M. Crandall, New York.
103 Obstetric Paralysis. T. T. Thomas, Philadelphia.

104 Transplantation of Testicle from Dead to Living Body. G. F. Lydston, Chicago.
105 Plea for Saner Methods in Treatment of Pulmonary Tuberculosis. T. J. Mays, Philadelphia.
106 Myasthenia Gravis. Report of Case. S. P. Goodhart, New York.
107 Combined Fracture and Orthopedic Operating-Table. C. H. Sanford, New York, and H. Fitz-Simmons, Boston.
108 Hygiene of Nutrition. H. P. De Forest, New York.
109 Physiologic Treatment of Catarrhal Deafness. A. C. Geyser, New York.
110 Hereditary Cerebellar Ataxia. S. A. Blauner, New York.
111 Hour-Glass Contraction of Uterus Following Use of Pituitary Extract. T. H. Cherry, New York.

Ophthalmic Record, Chicago

June, XXIII, No. 6, pp. 271-324

112 Pilycetenular Conjunctivitis; Its Importance in Conservation of Vision. B. W. Key, New York.
113 Ocular Rotations. F. Valk, New York.
114 Points Relative to Enucleation of Eyeball and Sympathetic Inflammation. E. R. Carpenter, El Paso, Tex.
115 Binocular Vision and Optic Chiasm. A. T. Poffenberger, Jr., New York.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

June 27, I, No. 2791, pp. 1393-1440

1 Adrenals. T. R. Elliott.
2 *Clinical Aspects of Body Temperature in Childhood. T. R. C. Whipham.
3 Vicious Circles of Neurasthenia. J. B. Hurry.
4 Internal Secretions and Dental Caries. H. F. Pickerill.

2. **Body Temperature in Childhood.**—A child whose temperature is raised, Whipham states, should be put to bed and be lightly but efficiently clothed. Plenty of fresh air may be allowed, but at the same time precautions must be taken to protect the patient from draughts. In hot weather a bed-cradle may be used to keep the weight of the bedclothes off the child's body, and thus add to its comfort. As a general principle the treatment should begin with a purge. A small dose of calomel, followed by castor-oil, is nearly always beneficial. It not only clears out the intestinal tract, but also serves to reduce the fever, whatever may be its cause. In cases in which the alimentary tract is involved special attention must, of course, be paid to such symptoms as constipation, vomiting and diarrhea, but even when some other part is at fault the excretory functions must always be regulated by appropriate means. Methods to reduce the temperature, should be deferred until a diagnosis of the case has been made, unless the child is extremely restless or shows other signs of distress; then the bath is the safest and the most efficacious method.

Older and sturdy children may be immersed in a cool bath at about 80 F., or the temperature of the water may be gradually lowered from 100 F. by the addition of ice. The body and head should be sponged freely, and after five or ten minutes the child should be dried quickly, and wrapped in a warm blanket. Young children and infants, however, especially those who are weakly, do not stand cold water well, and the same applies to the cold pack. The shock to the nervous system is too great, and harm or even death may ensue. For such children a warm or tepid bath should be employed at a temperature not lower than 90 F. If for any reason a bath is impracticable or inadvisable, sponging with tepid water, or equal parts of alcohol or vinegar and water, may be used. An alternative method is that of evaporation. The body is loosely wrapped in one or two layers of gauze, which is moistened from time to time with water 115 F., evaporation all the while being promoted by means of a fan. The feet at the same time should be kept warm by the application of hot-water bottles. This may be continued for a quarter or half an hour. By these means the body temperature is reduced, often to a marked degree, and the nervous system is soothed. Frequently, too, the child rapidly falls into a refreshing sleep. In cases of continued fever, or cases in which there is evidence of meningitis, an ice-bag lightly applied to the head is of value, but this, again, must be used with caution in the case of infants, as the continued cold is liable to cause a subnormal temperature. Its use, therefore, should, as a general rule, be restricted to rather older children. Antipyretic drugs are rarely necessary in early life, and should not be given merely with a view to reducing the temperature. In a general way the usual symptoms of fever may be allayed by a mixture containing citrate of potassium or magnesia and liquor ammonii acetatis. For older children this may be made to effervesce; it is palatable, cooling and helps to check the thirst.

As a rule the patient may be allowed to drink freely and in the case of infants suffering from diarrhea, infusions of normal saline solution under the skin are of great benefit. In the case of infants milk should be withheld and albumin water alone given for twenty-four or thirty-six hours at least, as in them intestinal toxemia is the commonest cause of fever, and must either be treated or excluded before the child is allowed to return to a milk diet. For children above 3 years of age a fluid diet, consisting largely of milk, should be ordered. As a rule the food should be given cold, and, if there is vomiting it may be iced. In respiratory diseases, however, it is often best to give the food slightly warmed, and in cases of collapse hot milk acts as a useful stimulant. Regular feeding in cases of prolonged pyrexia is a necessity in order to maintain the patient's strength, but, if possible, feeding should take place during a remission of the temperature; at other times only water or stimulant in the form of alcohol should be given. It is essential that the patient should not be awakened from sleep in order to be fed, unless there is excessive drowsiness or stupor, in which case the child must be roused at intervals, as otherwise sufficient nourishment will not be taken. In transient fevers children may go without food until the temperature falls, though water may be given freely. Prolonged pyrexia, on the other hand, is debilitating, and requires generous but careful feeding.

Dublin Journal of Medical Science

June, III, No. 510, pp. 401-480

5 Retrospect of Vital Statistics in Ireland. W. J. Thompson.
6 Leukosarcomatosis. W. D. O'Kelly.
7 Relationship between Chorea and Rheumatism. A. F. Draper.

Indian Medical Gazette, Calcutta

June, XLIX, No. 6, pp. 213-252

8 Thousand Cataract Operations Performed in Six Weeks at Shikarpur, North Sindh. H. T. Holland.
9 Two Years' Experience of Extraction of Cataract in Capsule with Notes on 1,137 Consecutive Operations. R. Baird.
10 Irrigation, after Extracapsular Extraction of Cataract. E. A. R. Newman.
11 Thyroid and Some Cases of Hypothyroidism. C. Milne.
12 Catarrhal Jaundice in Calcutta. A. Caddy.
13 Case of Ruptured Spleen: Splenectomy: Recovery. F. A. L. Hammond.
14 Case of Rupture of Spleen. C. L. Gosain.
15 Cases Treated in Ripon Hospital, Ahmednagar. C. Maddock.
16 Peritoneal Cyst of Traumatic Origin and Other Cases. F. E. Wilson and C. H. Barber.
17 Case of "Simple, Non-Infective" Thrombosis. G. D. Franklin.
18 Case of Psoas Abscess Treated by Injections of Pneumococcal Vaccine. W. O. Walker.

Journal of State Medicine, London

July, XXII, No. 7, pp. 385-448

19 *Human and Bovine Tuberculosis. Treatment by Special Kinds of Tuberculin. N. Raw.
20 Feeble-Minded Children. M. Dendy.
21 Dental Clinics. L. Williams.
22 Medico-Pedagogic Methods in Primary School Education. J. Arrowsmith.

19. **Human and Bovine Tuberculosis.**—Raw has been impressed with the fact that children who suffer from the surgical forms of tuberculosis, such as tuberculous glands, joint diseases and lupus, very rarely indeed are attacked even in the later stages of their malady, by phthisis pulmonalis. The lungs may be affected in the course of a general miliary tuberculosis, but it is rare to see phthisis pulmonalis associated with surgical tuberculosis. The cause of death in the great majority of these cases is exhaustion and waxy degeneration, so that Raw has come to the conclusion that these two varieties of tubercle are antagonistic to each other in the human body, and that children who have suffered from

V. 19

bovine tuberculosis in the form of strumous glands, spinal caries, strumous joints and lupus are immune against phthisis pulmonalis. He believes that tubercle bacilli of the *typus humanus* produce phthisis pulmonalis, ulceration of the intestines and tuberculous laryngitis; whereas, tubercle bacilli of the *typus bovinus* produce tuberculous peritonitis, tuberculosis of the lymphatic glands, tuberculous bones and joints, tuberculous meningitis (probably) and lupus. In his opinion acute miliary tuberculosis is of bovine origin.

Journal of Tropical Medicine and Hygiene, London

June 15, XVII, No. 12, pp. 177-192

23 *Case of Osteoperiostitis Developing after Probable Attack of "Febris Columbensis." A. Castellani.

23. Osteoperiostitis Developing after "Febris Columbensis."—In a case of chronic osteoperiostitis developing after an attack of continuous fever said to have lasted six weeks, a microorganism was isolated by Castellani from the pus with all the characters of *B. columbensis*. The blood of the patient agglutinated the strain isolated from the pus as well as all the strains of *B. columbensis* kept in the laboratory, including the original one isolated in 1905. There is little doubt in Castellani's opinion that this germ was the cause of the osteoperiostitis, and that the fever from which the patient states he suffered before the periostitis developed, was, according to all probabilities, an attack of "febris columbensis."

Lancet, London

June 27, 1, No. 4739, pp. 1799-1862

24 Hygienic Aspect of Coal-Mining Industry in United Kingdom. F. Shufflebotham.
25 *Treatment of Leprosy by Intravenous Injections of Iodoform. B. J. Courtney.
26 Some Cases of Traumatic Hysteria. J. W. G. Grant.
27 Mental Symptoms Associated with Exophthalmic Goiter. W. Leggett.
28 Case of Fibrosis of Lung Treated with Bacillus Friedlander Vaccine. A. Sandison.
29 Case of Acute Non-Calculous Cholecystitis in Child. F. C. Pybus.
30 Case of Gall-Stone Causing Intestinal Obstruction. S. Wickenden.

25. Treatment of Leprosy by Iodoform.—Of the 12 patients on whom the treatment was tried by Courtney for three months or longer, 4 were of the purely nodular type, 5 were of the purely anesthetic type, and 3 were of the mixed type. As regards the duration of the disease at the time treatment was commenced, the shortest was two years and the longest seventeen years. To begin with ½ grain of iodoform was given twice a week; this was gradually increased up to 1 grain given five times a week. A ½-grain tablet of iodoform is thoroughly powdered and put into an all-glass hypodermic syringe, 3 minims of liquid paraffin and then 7 minims of ether are drawn into the syringe, the needle is sealed with lanolin to prevent evaporation of the ether, and the syringe is then shaken until all the iodoform has been dissolved. The skin of the patient's arm having been washed with an antiseptic lotion and sponged with ether, a tourniquet is applied above the elbow sufficiently tight to obstruct the venous but not the arterial circulation, and the contents of the syringe are injected into the median basilic or median cephalic vein. In addition to the intravenous injections in four cases a local reaction was aimed at also—that is to say, the solution of iodoform was injected into the substance of the nodules, the amount varying from 10 to 30 minims of the solution according to the size of the nodule. Four or five nodules were treated in this way at the same time, and when the resulting ulceration had healed another 4 or 5 were injected, and so on. All the patients were examined for the presence of lepra bacilli, the fluid being taken from a nodule when such was present, and failing this the nasal secretion was examined, and the number and effect on the bacilli were observed from time to time during the course of the treatment. The bacillus was found in all the tubercular and mixed cases, but in only one of the anesthetic cases.

The results are classed as follows: (a) Effects on tubercular cases.—Of this variety 4 patients were treated, 3 of whom showed marked improvement during the period, and in 2 of the mixed cases the patients also showed improvement as regards the tubercular portion of the disease. After a period varying from six to twelve weeks the nodules became softened and finally broke down and ulcerated, the ulcers discharging copiously a thin pus containing numerous lepra bacilli. Other nodules, generally small, and more especially on the face, apparently underwent absorption and disappeared without ulceration. Two of the patients had large leprotic infiltrations stretching across the chest and abdomen; these underwent ulceration in the same way as the smaller masses.

(b) Effects on anesthetic cases.—Of this variety 5 patients were treated, and all with the exception of one were advanced cases, with numerous anesthetic areas, paralysis of the muscles of the forearm and the interossei muscles of the hand, "*main en griffe*," and loss of fingers or toes. None of these symptoms underwent any noticeable change during the period of treatment; as it is probable, however, that in these patients the destruction of the nerve fibers had proceeded so far as to be converted into connective tissue, no other result could be expected from either this or any other remedy. In the fifth case, which was one of only two years' duration, and in which the patient had no other symptoms beyond the patches of anesthesia on the skin, there was thought to be some slight improvement, but not sufficiently definite to be properly described as being due to the treatment.

(c) Effects on special symptoms and general health.—All the patients treated, both tubercular and anesthetic, said that they felt better and stronger as a result of the treatment, that their appetites had improved, and that they were able to do more work.

(d) Effects on the lepra bacilli.—The method of investigation was as follows: Fluid from a nodule or from the nose was taken and stained by Ziehl-Neilsen's method, and the number of bacilli in a dozen fields was noted. This was done from time to time during the course of the treatment and the results compared. In the cases in which the ulceration occurred it was found that during the period of profuse discharge and sloughing of the contents of the nodule the number of the bacilli was greatly increased, innumerable clumps being seen in each field. After the contents of the nodule were extruded, leaving a clean granulating surface, the number gradually declined, until many fields contained no bacilli at all, and others contained either small clumps or bacilli scattered singly. With regard to the nodules which underwent absorption, similar effects were noted.

Sei-I-Kwai Medical Journal, Tokyo

June, XXXIII, No. 6, pp. 33-38

31 Influence of Osmotic Pressure on Caliber of Vessels. Kubota.
32 Antigen Action of Tubercle Bacillus Freed from Fats. K. Momose.
33 Clinical and Bacteriologic Study of Kubisagari Disease. P. L. Conchoud and F. Shionnoya.
34 Orthodiagraphic Examination of Heart in Beriberi. Y. Ido and Y. Watanabe.
35 Experimental Study on Tetredon Toxin. Kariya.
36 *New Method for Estimation of Sugar in Small Quantity of Blood. Kaminura.

36. Method for Estimation of Sugar in Small Quantity of Blood.—For this purpose two solutions are made by Kamimura; the first solution is composed of 4.278 gm. of pure crystalline sulphate of copper and 5 liters of distilled water, and the second solution is made up with 2.0 c.c. of glycerin, 21.0 gm. of caustic potash and so much liquor ammonia (sp. gravity 0.96) as to make the mixture up to one liter. Five c.c. of the first solution, which corresponds to 0.005 gm. of glucose, is put into Sudo's glass-tube and then it is filled up to mark "X" with the second solution. The upper surface of this mixture is then covered with liquid paraffin to prevent the influence of the air on the copper solution.

The plasma or serum is isolated from the blood, which is going to be examined, and the quantity of which needs be only 1 to 2 c.c.; it is then diluted 5 to 6 times its original volume with water, after separating its protein component in order to make the filtration easy. The filtrate is added to the mixture of the copper solution which has been warmed up to from 80 to 85 F. beforehand drop by drop till the copper

solution is absolutely discolored. The quantity of sugar X can be calculated by the following formula, N being the quantity of the filtrate employed: $x = \frac{0.005}{N}$ by $100 \frac{0.05}{N}$. In case the whole filtrate is not enough to discolor the copper solution one adds a quantity of 0.02 g/dl. solution of glucose to help the final discoloration. The formula runs then as follows: $x - \frac{0.05\text{-}0.02 \times b}{a}$ a = the quantity of the filtrate used; b = the quantity of the glucose solution added. This method is simple and can be carried out with any quantity of blood. The results are fairly exact, the difference against the control examinations being not more than 3 per cent.

Annales de Médecine et Chirurgie Infantiles, Paris

June 15, XVIII, No. 12, pp. 393-428

37 Inconveniences of Luetin Test for Diagnosis of Syphilis in Children. G. Blechmann and M. Delort.
38 Serotherapy of Cerebrospinal Meningitis; Two Cases. M. Delort and J. Stiassnie.
39 Hernia and Appendicitis. V. Veau.
40 Heliotherapy and Surgical Tuberculosis. A. Trèves.

Bulletin de l'Académie de Médecine, Paris

June 16, LXXVIII, No. 24, pp. 805-837

41 The Economic Prognosis with Industrial Accidents. (Pronostic social des accidents du travail.) E. Schwartz.
42 The Painful Form of Stenosis of the Pylorus. Enriquez. See Paris Letter, page 177.

Journal de Médecine de Bordeaux

LXXXV, Nos. 23-25, pp. 387-434

43 Cause of "Black Tongue" Still a Mystery. (Les parasites des langues noires.) L. Jannin.
44 Favorable Results of Induced Pneumothorax; Thirty-Eight Cases. C. Murard and C. Colbert.
45 Right and Left Air Passages Not Independent of Each Other. (Indépendance fonctionelle des voies aériennes droites et gauches.) Got.

Lyon Chirurgical

June, XI, No. 6, pp. 549-678

46 *The Fibula the Best Bone for Transplantation in Conservative Operations. (Le peroné greffon de choix: Son utilisation dans les opérations conservatrices, pour ostéosarcome en particulier.) M. Gangolphe and P. Bertein.
47 Transplantation of Fascia Valuable in Injuries of the Abdominal Wall. (Sur la greffe aponévrotique libre.) E. Greggio.
48 Decapsulation of the Kidney in Mercurial Nephritis; Four Cases. G. Tisserand.
49 Embolus of the Pulmonary Artery. Trendelenburg's Operation. Death during the Operation. G. Leclerc.
50 Arteriovenous Aneurysm of the Common Femoral Vessels. Extirpation and Quadruple Ligation. H. Bouquet.

46. **Transplanting the Fibula.**—Gangolphe and Bertein regard autoplastic transplantation of bone as necessary with any considerable loss of substance in bone. The fibula is the best bone to use because it is so easily removed, being near the surface; because it is not of great importance in its normal position, and because it yields a graft surrounded completely by periosteum. A complete segment of the bone should be taken at about the middle of the diaphysis. If the upper end is taken so as to secure a cartilaginous surface for use in a joint, care must be taken to avoid the external popliteal. The lower incision should not be less than 5 cm. from the external malleolus. The graft should be cut a little longer than the gap to be filled, pointed at the ends, and inserted into the marrow cavity of the bone being repaired. If this cavity is too small the transplant may be sutured in place with wire. The results were very encouraging in the 20 cases here compiled of transplantation on account of osteosarcoma; in 5 for comminuted fractures; 21 for osteomyelitis, and 1 for a case of bone syphilis.

Lyon Médical

XLVI, Nos. 23-24, pp. 1253-1364

51 Removal of Cancer of the Orbit with Preservation of Eyeball; Six Cases. No Recurrence in Five. E. Rollet.
52 Early Operation in Appendicitis and Closure of the Wound without Drainage. M. Durand.
53 Symptoms of Disease of the Upper Medulla; Two Cases. L. Beriel. Commenced in No. 22.

Presse Médicale, Paris

XXII, Nos. 49-51, pp. 465-496

54 Diagnosis and Emetin Treatment of Amebic Dysentery. L. Lagane.
55 *Albumin Content in Differentiation of Effusions and Transudates. (L'albumino-diagnostic des épanchements des séreuses.) Mosny, Javal and Dumont.
56 *Petrolatum in Treatment of Constipation. (L'huile de vaseline comme exonérateur intestinal.) A. Martinet.
57 Endonasal Treatment of Frontal Sinusitis. M. Denis and L. Vacher.
58 Azotemia and Death. D. Dumitresco and A. Popesco.
59 Syncopal Form of Paroxysmal Tachycardia. Esmein and Donzelot.

55. **Differentiation of Effusions and Transudates.**—The Rivalta test fails when it is a question of cardiac pleurisy or transudate, in which differentiation is most important. Mosny and his coworkers have determined by study of fifty cases that the albumin content in cases traceable to a like cause kept within a characteristic range. This "albumino-diagnostic" method is based on precipitation of the albumins in the fluid and dosage by weight, or estimation of the content by refractometry. The effusion with cancer or serofibrinous and infectious pleurisy has an extremely high albumin content, fully 40 to 66 gm. to the liter. An albumin content of less than 30 gm. speaks for a transudate. In the case of a boy of 11 with pleural effusion and anasarca, the diagnosis of tuberculous pleurisy and peritonitis was first disproved by the repeated finding of only 4 to 7 gm. of albumin in the puncture fluids. On this finding alone the diagnosis was changed to adherent pericarditis and the course of the case confirmed this. In another case an extensive collection of fluid in the left pleural cavity, developing after a childbirth, showed only 20 or 30 gm. albumin on repeated examination, and necropsy disclosed an entirely unsuspected mitral stenosis confirming the assumption of the mechanical origin of the collection of fluid. In another case the albumin content of only 3 gm. in the large accumulation of fluid in the abdominal cavity first threw doubt on the diagnosis of tuberculous peritonitis made by different physicians in the course of fifteen years. Closer examination of the case then revealed hydronephrosis which had previously escaped detection.

56. **Petrolatum in Treatment of Constipation.**—Martinet states that petrolatum can aid in the relief of constipation as a rule only when the trouble is due to spastic conditions. In persons inclined to atony and hyposthenia the effect is poor or directly injurious.

Revue de Chirurgie, Paris

June, XXXIV, No. 6, pp. 721-897

60 Polyp in Nasopharynx. E. J. Moure and G. Canuyt.
61 The Aponeuroses in the Axilla in Relation to Phlegmons. L. Moreau.
62 *Latent Retention of Bile. M. Brulé, H. Garban and L. G. La Salle.

62. **Latent Retention of Bile as Sign of Injury of Liver.**—In many conditions such as general anesthesia, appendicitis, etc., the liver is more or less affected but this escapes notice unless the urine is examined for retention of bile. The research here reported shows that this retention is not of the whole bile, but only of one or more of the bile elements. Only the liver cells themselves are capable of this discriminating retention. When it occurs it shows that the liver is not functioning normally and hence the detection of this is extremely important when it is proposed to inflict further injury on the liver, for instance, by general anesthesia. Brulé and his coworkers have been applying simultaneously all the tests in vogue to detect the presence of bile elements in the urine, and state here that the two simplest are about as sensitive and reliable as any and can be applied at the bedside. These are the Ehrlich benzaldehyd and Hay sulphur tests. Dusting a little dry flowers of sulphur on fresh and filtered urine reveals the presence of bile salts by the sinking of the sulphur to the bottom. Unless the urine contains biliary salts, the surface tension is sufficient to buoy up finely powdered sulphur. The benzaldehyd reagent is a mixture of 8 gm. paradimethylamidobenzaldehyd; 80 gm. concentrated hydrochloric acid and 200 gm. water. When a

few drops of this reagent are added, cold, to fresh urine, the tint changes to pink or red if it contains urobilinogen.

With these tests of the morning urine it was found that ether has an injurious action on the liver more often than has been suspected hitherto. The retention of bile elements in such conditions may be compared to the transient albuminuria during acute infections, but Brulé's experience seems to show that the liver is affected more regularly and to a greater extent than the kidneys under such circumstances. Positive findings were obtained in 11 of 21 cases of appendicitis facing an interval operation. Also in all but 5 of 33 patients just after an operation under ether, and in all but 1 of 15 under chloroform.

Revue Médicale de la Suisse Romande, Geneva

June 20, XXXIV, No. 6, pp. 385-448

63 Imagined Pregnancy. (Clinique obstétricale.) Rossier.
64 Operative Obstetric Cases. Rossier.
65 *Diabetes and Tuberculosis. Morin.

65. **Diabetes and Tuberculosis.**—Morin quotes Landouzy's recent statement that diabetes is not a morbid entity or nutritional disease but is a syndrome consequent on some infectious, toxic or parasitic affection. The correctness of this view is rendered evident by the improvement in the diabetes when the infectious, toxic or parasitic affection yields to proper treatment, for instance, specific treatment of syphilis or abstention from alcohol. The toxic or infectious influences may act on the tissues in general but their injurious effect is probably most pronounced on the glands and nervous system. In every case of diabetes the primary trouble, especially tuberculosis, should be sought and treated as the main element in the cure. He has always found a mountain climate of great benefit in diabetes by the way in which the elimination of carbon dioxid and assimilation are promoted.

Semaine Médicale, Paris

June 24, XXXIV, No. 25, pp. 289-300

66 Changes in Other Kidney after Nephrectomy, etc. (De la signification de la dégénérescence granuleuse et des lésions cytolytiques dans le rein après ligature ou excision du rein du coté opposé.) V. Jonnesco.

Archiv für Kinderheilkunde, Stuttgart

LXII, Nos. 5-6, pp. 321-482. Last indexed February 28, p. 736

67 Döhle's Inclusion Bodies Found in Leukocytes in Scarlet Fever, Measles, Diphtheria, Tonsillitis and with Serum Rashes. S. N. Rosanoff.
68 Negative Experiences with Rosenbach's Tuberculin in Internal Tuberculosis in Children. A. Stommel.

Archiv für klinische Chirurgie, Berlin

CIV, No. 4, pp. 843-1206. Last indexed July 11, p. 202

69 Experimental Transplantation of Epiphysis. (Transplantation des Intermediärknorpels in Form der halbseitigen Gelenktransplantation.) Heller.
70 Histologic Changes in Transplanted Fascia. (Experimentelle Untersuchungen über den histologischen Umbau der frei transplantierten Fascia lata und Beweis für die Lebensfähigkeit derselben unter Heranziehung der vitalen Färbung.) O. Kleinschmidt.
71 *Experimental Research on Muscle Flap Used to Arrest Hemorrhage. (Freie Uebertragung von Muskelstücken aufs Herz und in einige andere Organe.) A. Läwen and A. Jurasz.
72 Successful Excision of Extensive Hemangioma of Lower Lip and Tongue. E. Sonntag.
73 Deafness Following Fracture of Base of Skull. (Ein- und gleichseitige Vagus- und Accessoriuslision und vollkommene Taubheit nach Schädelbasisfraktur.) E. A. Lüken.
74 *Muscle Flaps Used to Arrest Hemorrhage in Heart and Liver. (Stillung von Herz- und Leberblutungen durch frei übertragene Muskelstücke.) A. Läwen.
75 Prophylactic Treatment with Extract of Leeches as Preliminary to Laparotomies. (Versuche über Adhäsionsbeschränkung in der Bauchhöhle durch Hirudinbehandlung.) W. Schmiedt.
76 *Tests of Functional Capacity of the Stomach. (Zur funktionellen Magendiagnostik.) J. Hohlbaum.
77 Mobilization of the Duodenum. A. T. Jurasz.
78 Single Echinococcus Cyst in the Omentum. (Ein solitärer Netzechinococcus.) O. Kleinschmidt.
79 Congenital Dislocation of the Patella. W. Dünkeloh.

71-74.—**Muscle Flaps to Arrest Hemorrhage.**—All the articles in this number of the *Archiv* issue from the surgical clinic at Leipzig in charge of Prof. E. Payr. Läwen and Jurasz found it possible to arrest the hemorrhage from the heart, after injury of a ventricle, by suturing a flap of muscle over the bleeding spot. They illustrate the procedure and the outcome in fifteen rabbits. The bleeding was arrested at once and the heart kept on working the while. In another series of experiments they sutured the muscle flaps after inducing bleeding from a kidney, liver, in the marrow cavity of the tibia or in the brain. The hemorrhage was arrested with special promptness and thoroughness in the liver and kidney wounds. The muscle flap cohered to the tissues of the bleeding organ in a way to ensure almost immediate occlusion of the opening.

76. **Tests of Stomach Functioning.**—Hohlbaum discusses the various tests in vogue. Comparison of the histories of a number of cases with the findings at the operation confirms the clinical importance of the Salomon test, positive findings indicating an ulcerative process in the stomach. It is of no value for differentiation; here the Gluzinski test is of paramount importance. The literature on each is listed and the details of a number of cases are given. The Salomon test is based on the assumption that the presence of albumin in the stomach contents indicates oozing of serum from an ulcer. He regards the findings as suspicious of cancer when the rinsing fluid shows rapidly a flaky turbidity or its nitrogen content is above 20 mg. in 100 gm. of the rinsing fluid. Hohlbaum found the prompt flaky turbidity pronounced in all of his 20 cases of gastric cancer while it was constantly negative in 5 cases of duodenal ulcer, also in 5 of gall-stone trouble; in 2 healed gastric-ulcer cases, and 1 of 3 hard ulcers. He calls attention in particular to 2 cases in which the subjective disturbances, palpation findings, chemical and microscopic findings after a test breakfast, and Roentgen findings—all seemed to show an identical process in the stomach, but the Salomon test was positive in one and negative in the other. In each instance the operation confirmed the reliability of the Salomon findings; one proving to be a cancer in the stomach, the other a case of chronic pancreatitis.

The Gluzinski test is based on the assumption that incipient cancer is always accompanied by a chronic mucous gastritis which interferes with secretion of the gastric juice. Examination of the stomach content after three different test meals in the course of one day reveals whether gastric juice is being secreted normally; if not, this in connection with the clinical signs of trouble, points to malignant disease. Positive findings with it were obtained in all the cancer cases, the test proving remarkably reliable in differentiating between cancer and simple ulcer when there is free acid in the stomach content. It is liable to fail, like other tests, in the presence of a callous ulcer, and transverse resection is the advised procedure for this in any event. The microscope often reveals malignant degeneration in apparently a simple callous ulcer.

Archiv für Verdauungs-Krankheiten, Berlin

June 18, XX, No. 3, pp. 299-422

80 Carmin for Marking Off Stools. (Zur Verwendung der Karminprobe für die Bestimmung der Verweildauer im Verdauungskanal.) H. Strauss.
81 *Examination of Stomach Content with and without the Stomach Tube. (Mageninhaltsprüfung ohne Anwendung des Sondenverfahrens.) E. Schütz.
82 *Blotting-Paper Test for Stomach Acidity. (Kapillaranalyse des Magensaftes, ihre praktische Bedeutung nebst einigen Bemerkungen, andere Methoden der Magensafttitration betreffend.) H. Sochanski.
83 Present Status of the Duodenal Tube. M. Gross (New York).
84 Recurring Indicanuria in Diagnosis of Gastro-Intestinal Disease. G. Baar and K. Frenkel.
85 *Organic and Functional Gastric Achylia. L. Disqué.

81. **Examination of Stomach Contents.**—Schütz has been applying the various methods in vogue for estimating the condition of the stomach contents without and with the stomach tube, and tabulates the findings with some of them. None can compare in efficiency, he declares, with the stomach tube; next come the occult-hemorrhage, Roentgen-ray and residuum tests. The Fuld sodium bicarbonate test for free hydrochloric acid can be applied under all circumstances and is simple and convenient. The patient drinks a solution of 2 gm. sodium bicarbonate in 30 gm. water one hour

after a test breakfast. As the patient stands and the ear is applied to the epigastrium and upper abdomen, the intensity and duration of the effervescence then audible gives a good idea of the amount of free acid present.

82. **Blotting-Paper Test for Stomach Acidity.**—Sochanski regards Holmgren's method of capillary analysis of the stomach content as great progress. It is based on the fact that when a solution of a mineral acid is dropped on blotting paper, the water spreads faster and farther than the acid, so that the proportion of acid in the fluid can be readily computed from the proportional size of the concentric rings. He reports here the findings with gastric contents from thirty-two persons tested on blotting paper prepared with very weak stains to show up the different acids in the stomach content. The quantitative and qualitative findings are quite reliable and the test can be applied to vomit at the bedside. He has found the test most instructive when the blotting paper is marked off with concentric circles crossed by a perpendicular strip stained with 1 per cent. solution of congo red, and a horizontal strip stained with 0.5 solution of alizarin red. He uses 0.5 c.c. of stomach content and notes the results after an interval of three minutes. By this means the content in free hydrochloric acid and in lactic acid is shown up simultaneously.

85. **Gastric Achylia.**—Disqué concludes from his experience and study of the literature that functional achylia is more common than the organic and should be suspected in preference to the latter when there are signs indicating constitutional inferiority, weakness, nervousness or sagging viscera. The motor functioning of the stomach is generally more pronounced in case of functional than organic achylia. Abnormal chemical findings in the stomach content speak more for organic achylia. The prognosis is better with functional than with the organic form, and better with the acquired than the congenital. Treatment should be diametrically opposite with achylia of organic or functional origin. With the former the stomach should be spared as much as possible, while with functional achylia every effort should be made to nourish the patient; forced feeding may be advisable, with rather coarse foods. Meat will stimulate functioning of the stomach mucosa. Physical measures are also indicated with functional achylia to stimulate functioning, hydrotherapy, electricity, alternating hot and cold lavage, and douches, air baths, psychotherapy, etc.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXXI, No. 2, pp. 141-456

86 *Friedmann's Remedy. (Klinische Mitteilungen zur Behandlung der Tuberkulose mit dem Friedmannschen Mittel.) L. Brauer.
87 *Air Embolism in the Brain. (Cerebrale Luftembolie.) E. Wever.
88 Examination of Sputum in Diagnosis of Chronic Mixed Infection with Pulmonary Tuberculosis. E. Peters.
89 *Treatment of Asthma. O. Joppich.
90 Relations between the Public Hospitals and the Public Health. G. H. Sieveking.
91 The Skin Tuberculin Reaction in Infants. (Die v. Pirquetsche Kutanreaktion im Säuglingsalter.) Moltrecht.
92 Partial Antigens and Antipartial Antigens in Pulmonary Tuberculosis and Lupus. F. Salomon and A. Adam.
93 Relationships of the Tubercle Bacillus and Action of Sunlight on Antigens and Antibodies. (Verwandtschaftliche Beziehungen des Tuberkelbazillus.) E. Leschke.
94 Immunity to Tuberculosis. H. Much and E. Leschke.
95 Passively Acquired Anaphylaxis. K. Moeckel.
96 Treatment of Tuberculosis According to Deycke-Much. E. Alstaedt.

86. **The Friedmann Tuberculosis Treatment.**—Brauer remarks that the amazingly confident way in which Friedmann launched his remedy two years ago in the medical and lay press induced many physicians—in spite of misgivings—to yield to the wishes of certain tuberculous patients and use the remedy on them. The remedy at first could not be obtained in Germany for individual control research and the unfavorable reports which came from America further contributed to postpone the verdict of the German profession on the remedy. But when they were able to investigate it, the conclusions were almost unanimously negative. Brauer adds that communications made to him verbally and by letter demonstrate that the denunciatory verdict is even more universal and unanimous than is shown by what has been published in the leading medical journals. He gives the full details of the cases in which the treatment was applied in his service, prefacing them with Goldwater's report on the recent status of the seventy-seven patients given the treatment at the time of Friedmann's "dramatic and widely advertised visit" to New York. Brauer reiterates in conclusion that it is to be hoped in the interests of the tranquil and steady development of German medical science and of the health and peace of mind of the sick that the sensational agitation over the Friedmann tuberculosis treatment will disappear from scientific journals and, above all, from the newspapers. He appeals to the medical advisers of the daily papers to use their influence to keep out of the papers communications on half-baked or sensational medical matters liable to arouse misleading hopes in the general public, or at least to publish such items in a form suggesting critical suspension of judgment on the matter. A stricter critical judgment is needed on all the methods of treating tuberculosis, serologic and chemical, which are being put forth in all countries nowadays. Examination of the world literature on the subject cannot fail to show that much of what is published lacks an exact experimental basis and the work has been done without the necessary critical spirit.

87. **Air Embolism in the Brain.**—Wever injected air into the cerebral vessels of 7 rabbits, 24 dogs and 5 monkeys and compared the results with the clinical picture of the "mishaps" occurring in connection with operations on the lungs and chest, induced pneumothorax, etc. He compares his findings with those obtained by others in similar research. The presence of air in the cerebral vessels may cause clinical pictures of varying gravity, from transient nausea, vomiting, transient blindness, brief paresis, or brief cramps to actual epileptic seizures, or the patient may die suddenly without any premonitory symptoms. Necropsy may fail to reveal the air bubbles, especially if the heart continues to beat a few minutes longer. They were evident in the personal case reported as the patient collapsed and died at once during the operation for gangrene of the lung and cancer of the esophagus. The one certain and apparently constant sign of cerebral air embolism is the peculiar aspect of the fundus of the eye, striking and typical, as Wever shows in a colored plate. On account of the spontaneous mydriasis at the time, the fundus is easily inspected.

89. **Treatment of Asthma.**—Joppich expatiates on the necessity for combating the predisposing factors in asthma studying whether the oversensitive nerves belong to the peripheral or central nervous system, and the influence of overwork and worry, of dust, soot, fog or odors, acting directly or by summoning up memories. The reflex irritation causing the attack may be set up from the digestive, respiratory or genital organs, or the skin, and each case must be analyzed to discover and remove the special exciting factor in each. Wassermann seeks to reduce reflex excitability by deadening the sensibility of the nose with epinephrin and a local anesthetic on cotton applied for fifteen minutes a day for two weeks and later every second or third day. The reflex route thus gets trained out of the habit of transmitting the abnormal stimulus. Among the numerous other measures discussed is the subcutaneous injection of 0.5 or 1 mg. atropin with or without morphin.

Beiträge zur klinischen Chirurgie, Tübingen

XCI, Nos. 1 and 2, pp. 1-402

97 *Modern Battle-Field Surgery. A. Fraenkel.
98 Surgical Experiences in the Balkan Campaigns. F. Goldammer, Coenen, Weil, Erandes, Hauke and Cilimbaris.
99 Firearm Wounds. (Zur Kasuistik der Geschosswirkung.) P. R. v. Walzel.
100 Bullet Wounds of Vessels. (Schussverletzungen der Gefässe durch Spitzgeschoss und ihre kriegschirurgische Behandlung.) F. Lotsch.
101 Firearm Injuries Causing Aneurysms. O. R. v. Frisch.
102 Firearm Wounds of Nerves. W. Denk and M. Gerulanos.
103 *Surgical Indications in Firearm Wounds of the Brain. (Hirnschüsse im Kriege.) P. L. Friedrich.
104 Firearm Wounds of the Cranium. (Schädelschüsse im Kriege.) B. Breitner.

105 Firearm Wounds of Face and Neck. (Gesichts- und Halsverletzungen.) E. Suchanek.
106 Firearm Wounds of Thorax and Abdomen. E. Suchanek.
107 Firearm Fractures of Limbs. G. v. Saar, W. Goebel and J. Ballner.
108 Firearm Wounds of Large Joints. W. Denk.

97. **Modern Battle-Field Surgery.**—All the articles in this large double number of the *Beiträge* are on surgical experiences during the recent Balkan campaigns. A number are profusely illustrated.

103. **Firearm Wounds of the Brain.**—Friedrich remarks that modern battle-field surgery seems to be becoming more and more restricted to the brain and the limbs. Bullets in the brain mowed down about 50 per cent. of all that died on the field during the Franco-Prussian war, 54.2 per cent. in the Russo-Japanese war, 70 per cent. in the Boer campaign and the proportion was fully as high in the Balkan campaigns. He reviews a series of 43 cases of which he kept full notes and remarks that recovery was surprisingly frequent. He does not advocate trephining at once but only when cerebral symptoms develop under close and not too cursory observation. Any sudden or even a gradual rise in temperature, when the course has been afebrile before, suggests infection of the brain. It is especially important to have the temperature taken at night, between 12 and 2; it may be normal at all other times. If the normal pulse-rate drops to 55 or 50 or lower, this may be the only sign of infection. He had an operation done on this sign alone in several cases and always found the anticipated abscess in the brain. Any disturbance in consciousness, increasing somnolency, is also instructive while headache alone is not. We have no means of differentiating between meningitis and an abscess either on the battle-field or at home.

Berliner klinische Wochenschrift, Berlin

June 22, LI, No. 25, pp. 1157-1204

109 *Tuberculosis of Prostate. F. A. Hesse.
110 Obstetric Injury of Humerus. (Verletzungen des oberen Humerusendes bei Geburtslahmungen.) S. Peltesohn.
111 Cod-Liver Oil and Vegetables Often Superior to Butter and Cream in Infant-Feeding. (Fettaustausch in der Säuglingsernahrung.) J. Pesier.
112 *Excessive Tonicity of the Muscles in the New-Born. (Hypertonische Neugeborene und Säuglinge.) P. Heim.
113 Production of Anaphylatoxin. H. Sachs and E. Nathan.
114 Serum Reactions. L. Hirschfeld.
115 *Typhoid-Bacilli Carriers. (Dauerausscheider.) A. Hirschbruch.
116 *Segregation of Blood in the Limbs to Relieve Congestion in Internal Organs, Edema or Hemorrhage. Blum.
117 Streptothrix Found in Lumbar Puncture Fluid. M. Bernhardt.
118 Jaundice. (Icterus.) A. A. H. v. d. Bergh and J. Snapper. Commenced in No. 24.

109. **Tuberculosis of the Prostate.**—Hesse says that the evidence already on hand demonstrates that the prostate is the one organ in the urogenital apparatus most frequently affected with tuberculosis. In 815 cases of urogenital tuberculosis on record, the prostate was the seat of a tuberculous process in 68.5 per cent.; next came the seminal vesicles and thirdly the epididymis. The only relief lies in total removal of the gland with the seminal vesicles and vasa deferentia, and he emphasizes that the operation can never be done too early. A concomitant tuberculous process in the lung may retrogress after the prostatectomy, if not too far advanced. With one in the kidney, Hesse advises nephrectomy first, and if no benefit is apparent in six or eight weeks at most, prostatectomy should be delayed no longer. Cases are on record in which the process in the prostate retrogressed after removal of tuberculous testicles, and here, too, a delay of a month or two—never longer—might be permissible. The experiences of the last few years justify a more aggressive treatment of tuberculosis of the prostate than has hitherto prevailed.

112. **Hypertonicity in the New-Born.**—Heim remarks that the old, tacitly accepted conception that babies are created physiologically equal no longer prevails in modern pediatrics. The "exudative diathesis" was the first constitutional condition of inferiority recognized, and Heim here calls attention to another similar constitutional condition in which the infants react to physiologic and pathologic stimuli in a manner quite different from other infants. The nerves and muscles respond normally to electric tests but the deep reflexes and the physiologic tonus are exaggerated, and the muscles are drawn up, the limbs stiffly flexed. Sometimes a pencil placed in the infant's hand may be grasped so firmly that the child can be lifted by the pencil. The nervous threshold is extremely low in these children, and although they usually outgrow their hypertonicity by the fourth to eighth month, they develop into lean, muscular, bright children with very unstable vasomotor system. After birth they grow in height but do not increase normally in weight, and the sugar in breast milk is liable to bring on diarrhea. These hypertonic babies do not seem to be thriving even when stools and temperature are normal and their food seems to be correct and ample.

115. **Typhoid-Bacilli Carriers.**—Hirschbruch states that the great difficulty in discovering bacilli carriers is that they eliminate the bacilli only intermittently, as he shows by a number of instances from the Metz station. One woman was examined daily and the findings were negative fifty-two times and positive only twice, and yet typhoid bacilli were found at necropsy. In another woman examined regularly once a month, at one time there was a negative interval of three years and ten months between numerous positive findings. Typhoid bacilli were found in 1910 in the stool of a woman who had typhoid forty years before. She died three years later and nine days after her death another inmate of the house developed typhoid for which she was evidently responsible. Some of the known carriers voided the bacilli only after taking castor oil, others only after aloin and podophyllin, while in two of the known carriers elimination of the bacilli could not be stimulated by any of the numerous purgatives tried.

116. **Segregation of the Blood in the Limbs to Relieve Congestion in the Brain, Etc.**—Blum suggests that a constricting band at the root of the arms and legs would shut off a large amount of venous blood without interfering materially with the arterial circulation and thus might tide the patient past the danger point in pulmonary edema, acute hydrocephalus, serous meningitis and in acute hyperemia in the brain, with status epilepticus or paralyticus, and, above all, when there is hemorrhage from the lungs. Blum is convinced that this segregation of the blood may be found useful with hyperemia from any cause in an internal organ or tendency to hemorrhage, even with hemorrhoids, in addition to the usual measures.

Correspondenz-Blatt für Schweizer Aerzte, Basel

XLIV, Nos. 23-26, pp. 705-832

119 Operative Treatment of Enlargement of the Prostate. H. Wildbolz.
120 Necessity for Thyroid Treatment of Endemic Cretinism. A. Oswald.
121 *Pyelocystitis in Children. O. Stiner.
122 Treatment of Surgical Tuberculosis at Berne. C. Arnd. Commenced in No. 25.

121. **Pyelocystitis in Children.**—Stiner declares that getting chilled is generally found to have preceded the pyelocystitis even when it develops in a child with the exudative diathesis or a tendency to scrofula or sluggish metabolism. He describes several typical cases; in one a girl of 3 stood in the snow watching the skating and soon after returning home screamed that she was unable to urinate and fever soon developed. The external genitals were red and swollen. While a catheter was being prepared the child was seated in a hot bath of chamomile infusion and in five minutes the bladder spontaneously emptied itself. Improvement continued under hexamethylenamin and linden-flower tea internally, repeating the bath as necessary. After bathing the external genitals with boric acid, it was deemed safe to use the catheter, and the urine proved typical of cystitis. All returned to order again in two weeks, during which the child was kept in bed and treated with hexamethylenamin and salol alternately four days each. Both parents and the child were subject to frequent headaches. In the second case a boy of 19 months had "caught cold" from sitting on wet stone steps. A week later cystitis manifested itself by an

edematous swelling and cyanosis of the penis, preventing micturition. In some other cases the pyelitis began with convulsions or vomiting; catarrhal affections of the upper air passages are frequent. Sometimes pyelitis develops under the picture of meningitis or typhoid. It is more than probable, Stiner remarks, that occasionally an appendix has been sacrificed unnecessarily in an unsuspected pyelitis. In two other personal cases related microscopic examination of the urine was all that saved from this blunder. In the first, a girl of 4, had the tenderness typical of appendicitis with slight tenderness up toward and in the right kidney region. The other child, a healthy boy of 8, was taken with vomiting on his way to school and had high fever, vertigo and abdominal pain when he returned. The local findings spoke exclusively for appendicitis, but the boy mentioned that for several days frequent desires to urinate had annoyed him in school. The appendix was found much inflamed and swollen and the pyelitis healed along with the appendicectomy wound without any special measures.

Deutches Archiv für klinische Medizin, Leipzig

CXV, Nos. 1-2, pp. 1-206. Last indexed July 18, p. 282

123 Effect of Pancreas Extract on Blood-Pressure in Acute Experimental Nephritis in Rabbits. H. Zondek.
124 Functional Derangement of the Kidneys. (Zur Kenntnis der Nephropathien.) P. v. Monakow.
125 Amount of Albumin Katabolism in Fever and during Work. (Grösse des Eiweisszerfalls bei Fieber und bei Arbeitsleistung.) R. A. Kocher.
126 Measuring the Volume and Work of the Pulse. (Volum Messung des menschlichen Radialpulses, die Volumbolometrie. Neue Art der Arbeitsmessurg des Pulses.) H. Sahli.
127 Increase of Eosinophils after Injection of Tuberculin. (Verhalten der weissen Blutkörperchen, insbes. der eosinophilen Leukocyten, bei probatorischen Tuberkulininjektionen.) O. Brosamlen.
128 The Symptoms of Cystic Kidney Are Similar to but Not Identical with Those of Chronic Interstitial Nephritis. (Cystennieren.) W. H. Veil.
129 *Nucleinic Acid Test in Diagnosis in Blood Diseases. (Nukleinsäure bei Blutkrankheiten. W. Könnecke.

129. **Nucleinic Acid in Blood Disease.**—Leukocytosis is an expression of the biologic reaction of the bone marrow to the toxins of disease, and Könnecke found that intramuscular injections of a 10 per cent. solution of sodium nucleinate had the effect of stimulating the development of leukocytes and hastening their maturity.

Deutsche medizinische Wochenschrift, Berlin

June 18, XL, No. 25, pp. 1249-1296

130 Treatment of Tropical Diseases. P. Mühlens.
131 Intraperitoneal Treatment with Radium. H. Freund.
132 Experimental Study of the Protective Ferments. (Abwehrfermente.) V. Kafka and O. Pforringer.
133 Serodiagnosis of Cancer. (Zur Serodiagnostik der malignen Geschwülste.) K. Hara.
134 Animals Rendered Sterile by Treatment with Iodin. (Beeinflussung der Fortpflanzungsfähigkeit durch Jod.) O. Loeb and B. Zöppritz.
135 *Analysis of the Alleged Salvarsan Deaths. J. Benario.
136 *Indications for Friedmann's Treatment of Tuberculosis. (Erläuterungen zu den Indikationen für das Friedmannsche Mittel.) F. F. Friedmann.
137 Periodical Hemorrhagic Nephritis. N. J. Tschistowitsch.
138 Perforation of Cecum with Ileus in Lower Intestines; Two Cases. (Zoecumperforation bei tiefsitzendem Dickdarmverschluss.) M. Cohn.
139 Metastasis of Hypernephroma in the Spine. H. Harttung.
140 Technic for Intraspinal Salvarsan Treatment. Tuszewski.

June 25, No. 26, pp. 1297-1352

141 Treatment of Acute Infectious Conditions in Children. Tobler.
142 *Type of Tubercle Bacilli in Sputum. B. Möllers.
143 *Renal Diabetes. A. Galambos.
144 Calcification of Arteries without Preceding Arteriosclerosis. (Ungewöhnliche Verkalkung der Arterien.) A. M. Levy.
145 *The Wassermann Test in the New-Born. (Eigenartiges Verhalten syphilitischer Neugeborener gegenüber der Wa. R.) F. Lesser and R. Klages.
146 Roentgenotherapy Inadequate for Burrowing Cancers of the Skin. (Therapie des tiefgreifenden Hautkrebses.) P. Wichmann.
147 Action of Roentgen and Radium Rays on Internal Organs, Especially the Spleen. Heineke.
148 *Detachment of the Retina Cured by Operation. (Netzhautabhebung.) L. Müller.
149 *Experiences with Friedmann's Treatment of Tuberculosis. (Erfahrungen über F. F. Friedmanns Heil- und Schutzmittel.) R. Rosenfeld.
150 Experiences with Piorkowski's Treatment of Tuberculosis. (Zur Behandlung der Tuberkulose mit Schildkröten- Tuberkelbazillen nach Piorkowski.) P. Bonheim.
151 Technic and Results of Certain Forms of Electrotherapy. (Diagnostische und therapeutische Bedeutung der Kondensatorentladungen.) A. Schnee.
152 Propaganda for Reform. (Zur Bekämpfung der unlauteren Heilmittel- Reklame.) J. Schwalbe.
153 The Side-Chain Theory. (Zur erkenntnistheoretischen Würdigung der Ehrlichschen Seitenkettentheorie.) A. Dworetzky.
154 New Hamburg Institute for Marine and Tropical Diseases. F. Fülleborn.
155 The Price of Salvarsan. P. Ehrlich.

135. **Deaths After Salvarsan.**—Benario claims that only from 4 to 6 of the alleged 274 salvarsan fatalities compiled by Mentberger can stand analysis as to any connection with salvarsan given by a proper technic. In the 41 cases in which the drug was given to non-syphilitics the authors almost invariably state that the patient was dying from heart or liver disease or something of the kind and the salvarsan was given as the last resource.

136. **Indications for Friedmann's Treatment of Tuberculosis.**—This communication from Friedmann himself states that his experience has shown the necessity for simplifying the technic and drawing more strictly the lines in regard to the indications. The interval between two intramuscular injections must not be less than four or five months, as this interval at least is required before antibodies can be produced in adequate amounts. The effect of a simultaneous intramuscular and intravenous injection lasts for eight, ten or twelve months or longer. Restriction of the treatment to a single injection and then watchful waiting for many months is the secret of success. The intravenous "between injection" must be given, of course, whenever the infiltration in the gluteal muscle begins to be painful and to increase rapidly in size. He reiterates that the remedy consists of living bacteria which manifest their action very slowly. We must not forget that the process here is possibly like that of vaccination with cow-pox, the action of which extends over years and decades.

142. **Type of Tubercle Bacilli in Sputum.**—Möllers reports further experiences which confirm the rarity of bovine tubercle bacilli in pulmonary or bronchial gland tuberculosis. There are now 974 cases that have been recorded by thirty-six clinicians in which careful search was made for the special type of bacilli involved and in many instances animals were inoculated with sputum or scraps of tissue. Human tubercle bacilli were found alone in all but 0.51 per cent.; bacilli of the bovine type were found alone in only 5 cases, and associated with human bacilli in 2.

143. **Renal Diabetes.**—The case described by Galambos is possibly the severest one of true "renal diabetes" on record, while the metabolic details are tabulated with exceptional minuteness. The patient was a man of 50 with sugar in the urine and 156 gm. sugar and 274 gm. acetone plus acetic acid in the total urine (2,350 c.c.). The diabetes was a casual discovery when he consulted a physician on account of cramps in one calf; he felt otherwise entirely well. The sugar content of the blood was normal or below; alimentary hyperglycemia could not be induced and no connection was apparent between the intake of carbohydrates in the food and the fluctuations in the sugar content of the urine. The case therefore must be regarded as one of typical renal diabetes, and it seems to be the only one on record with acidosis. Galambos declares that the danger of coma threatens with renal diabetes—unless the acidosis can be cured—the same as with ordinary diabetes. This renders a carbohydrate diet imperative and especially as it does not augment the glycosuria with renal diabetes. Except for this, the clinical picture resembled in every respect that of phloridzin diabetes. The anatomic condition and the functional capacity of the kidneys have no bearing on the diagnosis. The low respiratory quotient and the absence of any rise under copious intake of carbohydrates confirm the defective oxidation of sugar. The prompt subsidence of the acidosis with increased intake of carbohydrates points to the loss of carbohydrates as the cause of the acidosis.

145. **Wassermann Reaction in the New Born.**—Lesser and Klages report that serum from the umbilical vein gave a positive reaction to the Wassermann test by Lesser's technic

and a negative reaction with another technic. This occurred regularly in 50 per cent. of the 1,280 infants examined for the purpose. This experience shows the necessity for applying the test with different antigens. The difference in the reaction seems to depend more on the alcohol or ether than on the organ used for the extract.

148. **Operative Cure of Detachment of the Retina.**—Müller says that both the patients operated on by his method two and a half and one year ago, were both entirely cured although the detachment of the retina was complete and of long standing. He operates only when all other means have failed, allowing at least a year for a thorough trial. His record now includes 24 cases operated on over two years ago; 10 are known to be entirely cured and a number improved while the outcome is not known in several. The overstretching of the internal membranes is what he seeks to remedy, thus reducing the size of the eyeball and restoring the vitreous body to its proper place. General anesthesia is required for the operation; the full technic is not given here.

149. **Friedmann's Treatment for Tuberculosis.**—Rosenfeld applied Friedmann's remedy in 43 cases of pulmonary tuberculosis with disappointing results, so that he had abandoned the method in these cases. But in two of his four cases of tuberculous glandular processes he states that decided and unmistakable improvement was realized.

Deutsche Zeitschrift für Chirurgie, Leipzig

CXXVIII, Nos. 3-4, pp. 209-432

156 Combination General Anesthesia. (Weitere Erfahrungen mit Kombinierten Narkosen.) P. Sick.
157 Sarcomas in Stomach and Small Intestine. (Magen- und Dünndarmsarkome.) B. Storch.
158 Rare Complications of Multiple Exostoses. H. Mosenthin.
159 Technical Points for Plastic Operations on the Esophagus. Syring.
160 Inheritance of Familial Physical Peculiarities. (Vererbung familiärer Merkmale, spez. den Vererbungsmodus der Bluterkrankheit und Versuch seiner Erklärung.) W. Lossen.
161 *Chronic Glanders in Man. (Rotz beim Menschen.) F. Ris.
162 Appendicitis. Esau.
163 Plastic Operations on Abdominal Wall. (Bauchdeckenplastik.) Grisson.
164 Operation for Exstrophy of the Bladder. (Blasenektopie.) A. Hagentorn.
165 Sugar and Charcoal as Dressing for Wounds. (Ueber den Zucker- und den Kohleverband.) A. Köhler.
166 Peculiar Healing of Supracondyle Fracture of the Humerus in Two Children. W. Carl.
167 Vulvar Cancer; Three Cases. Rittershaus.
168 Treatment of Fracture of External Condyle of the Humerus by Removing Loose Fragment. E. Fabian.

161. **Chronic Glanders in Man.**—Ris reports from Switzerland a case of this disease in a veterinarian of nearly 30. Six days after he had dissected the body of a horse with glanders he developed pain suggesting intercostal neuralgia, and the glanders then proceeded through the various stages of left pleurisy, abscesses in muscles, bronchitis, and pharyngo-laryngitis, the whole with a septic-pyemic course nearly all the time since the first symptoms in 1911. Ris applied roentgenotherapy and salvarsan, after failure of other measures, and the effect of both was decidedly favorable but the debility is so extreme still that the patient is in danger even if the salvarsan kills off the germs.

Medizinische Klinik, Berlin

June 24, X, No. 25, pp. 1045-1086

169 *Scarlet Fever and Nodose Erythema. H. Eichhorst.
170 Anemia and Its Treatment. A. Herz.
171 *Death after Neosalvarsan. (Todesfall nach intravenöser Injektion von Neosalvarsan.) R. Frühwald.
172 Osteoma in Frontal Sinus. (Stirnhöhlenosteome.) A. Zumhasch.
173 Germ Carriers at Sanatoriums and Spas. (Die Tuberkulose- und Influenza-Bacillen-Träger in offenen Kurorten und in Heilstätten.) Ritter.
174 Benefit from Mineral Waters in Organic Disease. (Haben die natürlichen Mineralquellen eine specifische Heilwirkung auf den erkrankten Organismus?) Lenné.
175 *Acute Congestion of the Liver. (Akute Stauungsleber.) J. Fels.

June 28, No. 26, pp. 1087-1126 and Supplement

176 *Clinical Importance of the Thymus. H. von Haberer.
177 *Seasickness and Its Treatment. (Die der Seekrankheit zugrunde liegenden Störungen und Therapie dieses Zustandes.) O. Bruns.
178 *Salvarsan in Herpes Zoster Ophthalmicus. H. Gebb.
179 Whooping-Cough. (Pertussis.) E. Popper.
180 Artificial Light in Treatment of Surgical Tuberculosis. Breiger.
181 Pulsation in the Throat. (Ueber Pulsationserscheinungen in der Rachenhöhle.) F. Wagner.
182 Serodiagnosis of Syphilis. (Abderhaldensche Dialysierverfahrens.) J. Luxenburg.
183 Laws of Heredity. (Abstammungs- und Vererbungslehre im Lichte der neueren Forschung.) W. Wangerin. Commenced in No. 25.
184 Gynecologic Practice. (Diagnostische und therapeutische Ratschläge für den gynäkologischen Praktiker.) R. Asch.

169. **Nodose Erythema in Connection With Scarlet Fever.**—Eichhorst has encountered two cases in which nodose erythema developed during convalescence from scarlet fever, and a third in which the erythema was accompanied by diphtheria. In both the first two cases the skin tuberculin reaction was positive. In all the cases the erythema gradually subsided, Craig, Perigal and Pollak have recently reported a case each of erythema nodosum following measles.

171. **Death After Intravenous Injection of Neosalvarsan.**—Frühwald cites the compilations of fatalities under neosalvarsan published by Tomasczewski and in Wechselmann's and Mentberger's pamphlets—a total of 29 cases, and the neosalvarsan, he says, must unquestionably be incriminated in 15. The symptoms were either those of toxic myelitis or encephalitis, and the new case he reports in detail belongs in this latter category. An otherwise healthy girl of 18 with secondary manifestations of syphilis in face, mouth and genitals, was given an intravenous injection of 0.75 gm. neosalvarsan in 2 c.c. distilled water, repeated five days later. The seventh day the girl was found unconscious and died in twelve hours.

175. **Acute Congestion of the Liver.**—Fels relates that when he found the liver much enlarged and very painful on pressure in the two cases reported, he took for granted some serious liver affection and informed the family of his grave prognosis. One patient was a girl of 4, the other an active woman of 68. The first had been taken suddenly with severe gastro-enteritis which yielded soon to treatment while the liver tumor persisted for a week and then all returned to normal. In the second case the chilliness and headache were followed by pain as of gall-stone colic and the liver was intensely painful and enlarged until it resembled the enlarged spleen of leukemia. Here too his grave prognosis was contradicted by the subsidence of symptoms and nearly complete retrogression of the liver tumor. These cases belong in the group of "peracute stasis liver" described by Ortner, as summarized in these columns Nov. 1, 1913, p. 1670.

176. **The Thymus.**—Von Haberer writes that the thymic-lymphatic status is unusually common in his region (Tyrol) and simple goiter is often accompanied by enlargement of the heart, tachycardia and other symptoms suggesting abnormal thymus functioning, and the thymus was always found enlarged in such cases. He excised part of the thymus in 20 cases of the kind, and always with the best effect. His experience confirms the assumption that both thymus and thyroid are responsible for Basedow's disease, the clinical picture being determined by the degree of involvement of each, the thyroid playing on the sympathetic, the thymus more on the vagus nervous system. In a case reported with illustrations a persisting thymus was suggested in a man of 29 by the extremely tall growth, the pallor, infantile genitals and growth of hair, the unusual development of the follicles at the base of the tongue, and dulness extending each side of the manubrium; palpation confirmed the presence of a large thymus. A fracture of the radius had healed in a vicious position and required correction but, before attempting this, Haberer operated on the thymus which proved the largest he had ever encountered. The thymus-reduction operation was easily done and the patient speedily recovered and then bore without harm the general anesthesia and operation on the radius. Haberer knows of no other case on record in which an operation was done on the thymus on the basis of the clinical diagnosis alone.

177. **Seasickness.**—Bruns made 172 tests of over 100 subjects in the revolving chair and found that the symptoms

induced were identical with those of seasickness. He accepts this as demonstrating that seasickness is a reflex phenomenon elicited in the predisposed by the unusual conditions in the apparatus for equilibration. Before applying the revolving experiments he tested the individual excitability of the cerebral and spinal nervous system and of the vegetative autonomic system. From the degree of excitability determined by these and other tests he was able to predict whether "seasickness" would follow or not when the man or woman was whirled around. Means to reduce this excitability are theoretically indicated during and to ward off seasickness; Fischer's recommendation to inject 1 mg. atropin during an attack is logical as this deadens the sensibility of the terminals of the vagus nerve. Bruns found that the atropin had a decidedly beneficial action and retarded the appearance of the seasickness when given as a preventive. During the attack it seems to act by stimulating the central nervous system rather than by paralyzing the peripheral nerves. If this is the case, caffein might be substituted for it here, or other drugs to combat the prostration and collapse during the attack.

178. **Salvarsan for Herpes Zoster.**—Gebb reports two cases of very severe herpes zoster starting in one eye; he made an intravenous injection of 0.45 gm. neosalvarsan or of 0.28 gm. salvarsan and a marked change for the better was manifest in forty-eight hours, soon followed by complete recovery. The patients were a man and a woman of about 60. The effect realized by the salvarsan suggests a possible infectious origin for the herpes zoster.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

June, XXXIX, No. 6, pp. 751-864

185 The Uncontrollable Vomiting of Pregnancy. (Hyperemesis Gravidarum.) O. Bondy.
186 Serodiagnosis of Pregnancy. E. Puppel.
187 Proteolytic Serodiagnosis in Gynecology and Obstetrics. F. Heinemann.
188 Topographic Palpation of Ileocecal Region, Especially with Displaced Tube. T. Hausmann.
189 *Turpentine in Prophylaxis and Treatment of Puerperal and Gynecologic Infections. H. Cramer.
190 Surgical Treatment of Inflammatory Disease of the Adnexa. L. A. Kriwsky.
191 Eye Symptoms with Pregnancy Kidney Trouble. Adam.

189. **Turpentine in Gynecology and Obstetrics.**—Cramer has used turpentine successfully in many cases of infected abortion. The uterus is swabbed with turpentine after curettage. He gives temperature charts from eight cases showing the sudden decline in temperature after the treatment. He describes one case of placenta praevia in which there was a putrid discharge that stopped after the twenty-four hour application of a turpentine tampon. He also uses it to disinfect the vagina before operations for cancer and prolapse. He has never witnessed any toxic effect from the turpentine.

Monatsschrift für Kinderheilkunde, Leipzig

XIII, No. 1, pp. 1-68

192 Effect of Epinephrin on the Sympathetic Nervous System of the Infant. G. Mogwitz.
193 The Normal Blood-Pressure in Children. E. Nirrnheim.
194 Disturbances of Sleep in Children. (Schlafstörungen im Kindesalter.) F. Hamburger.
195 Clinical Picture of Bacillary Dysentery in Infants and Children. (Bazilläre Ruhr im Säuglings- und Kindesalter.) K. Blühdorn and R. Schild.
196 Rumination in Infants. J. Peiser.

Münchener medizinische Wochenschrift, Berlin

June 23, LXI, No. 25, pp. 1377-1432

197 *Psychotherapy for Children. T. Gött.
198 Relations between General Nervous Symptoms Early in Syphilis and the Findings in the Spinal Fluid. W. Wechselmann and E. Dinkelacker.
199 Tuberculosis Vaccine. (Tuberkuloseimpfstoff.) J. M. Albahary.
200 *Dialysis Serodiagnosis of Cancer. A. Schawlow.
201 Acute Appendicitis during Pregnancy; Five Cases. Wanner.
202 Hemiplegia during Typhoid; Recovery. G. Wulf.
203 The Findings in the Spine with Chronic Ankylosis. (Wirbelsäulenversteifung.) E. Fraenkel.
204 *The Salvarsan Fatalities. (Die Salvarsantodesfälle und ihre Ursachen mit Berücksichtigung der Salvarsanschäden.) A. Schmitt. Commenced in No. 24.
205 Quacks as Medicolegal Experts. (Kurpfuscher als ärztliche Sachverständige vor Gericht.) O. Neustätter. Concluded in No. 26.
206 Propaganda for Reform. (Auswüchse der modernen Heilmittelproduktion.) C. Mannich.
207 Precursors of the Red Cross. (Humanitäre Bestrebungen im Kriege vor dem Roten Kreuz.) E. Haendcke.
208 The Price of Salvarsan. P. Ehrlich.

197. **Psychotherapy for Children.**—Gött emphasizes the necessity for systematic and scientific utilization of the principles of psychotherapy which in its intuitive, instinctive form has been applied from the very beginning of medicine. It is especially useful for children on account of the frequency and importance of neurotic and psychogenic symptoms and clinical pictures at this age. He compares conditions to a chord with one discordant note; with a good ear for music the discordant note can be detected and corrected in one of several ways unless the instrument is hopelessly defective, and even then it may be possible by transposing the chord to eliminate the discord. He has found hypnosis the most effectual measure to cure enuresis, and states that even Dubois confesses that he sometimes uses hypnosis for this purpose.

200. **Serodiagnosis of Cancer.**—Schawlow says that negative findings were obtained in only 7.5 per cent. of 40 gastric cancers and in 6.36 per cent. of 64 cases of malignant disease elsewhere. The findings contradicted the course of the cases only in 9 of the total 104 cases and these were all in the early months of the research.

204. **Fatalities after Salvarsan.**—Schmitt has been sifting and analyzing the 274 cases on record in which death followed salvarsan treatment. He shows that in a large proportion of cases there was no connection between the drug and the fatality; in others the dosage was excessive or the intervals too brief. The dose even for vigorous young men should not be over 0.4 or 0.5 gm. and for women 0.3 or 0.4 gm. and the interval between doses should never be less than a week.

Wiener klinische Wochenschrift, Vienna

June 11, XXVII, No. 24, pp. 833-876

209 Success of Albumin Milk in Infant-Feeding. (Eiweissmilchernahrung im Hause und im Spital.) E. Sluka and B. Sperk.
210 Differentiation of Bacteria by Protective Ferments Not Practicable. P. Kirschbaum and R. Kohler.
211 Experimental Research on Action of Arsenic on Organs. K. Ullmann.
212 Negative Results of Salvarsan in Hog Cholera. O. Baum and G. Herrenheiser.
213 *Stomach Changes in Secondary Phase of Syphilis. (Sekundäre Syphilis und Magenveränderungen.) H. Neugebauer.
214 Case of Poisoning from Luminal. (Luminalvergiftung.) J. Ungar.
215 Horizontal Ventilation by "Differential Aeration;" Knapen Method. M. Setz.

June 18, No. 25, pp. 877-924

216 Elimination of Lactic Acid in Urine and Its Connection with Carbohydrate Metabolism. (Milchsäureausscheidung im Harne und ihre Beziehungen zum Kohlehydratstoffwechsel.) O. v. Fürth.
217 *Dogs' Lungs after Seven Months of Induced Pneumothorax. O. Frank and N. v. Jagic.
218 Action of Digestive Ferments on Fish Poison. (Einwirkung der Verdauungsfermente auf das sogen. Fischgift.) S. W. Konstanzoff and E. O. Manoiloff.
219 The Protective Ferments in Antitoxins. (Nachweis von Abwehrfermenten in antibakteriellen Immunseren.) F. Schenk.
220 Pathogenesis of Ileus. R. Vogel.
221 Advantages of Dispensaries for Surgical Tuberculosis. M. Jerusalem.

213. **Gastric Disturbances of Syphilitic Origin.**—Neugebauer examined the stomach functioning in 200 syphilitics in the secondary stage and found manifest hypoacidity in 62 per cent., while in 18 there was total lack or only traces of free hydrochloric acid. In 17 per cent. hyperacidity was found. The patients were all young men between 20 and 25, healthy until syphilis had been acquired. Under treatment of the syphilis the gastritis improved while it did not seem to be modified by treatment of the stomach trouble alone. The syphilitic origin of the gastritis was confirmed by the abnormal amounts of mucus, alimentary galactosuria and other signs of syphilis and by the efficacy of specific treatment. He urges in conclusion the advisability of a tentative course of antisyphilitic treatment in all puzzling cases of stomach trouble.

V. 191

217. **Lung not Permanently Injured by Induced Pneumothorax.**—Therapeutic right pneumothorax was induced in two dogs and kept up complete for seven months. The lung then was found compressed to two-thirds the size of the other lung, but most of it expanded to its normal extent when inflated. Only the upper lobe was left permanently atelectatic. Slight hypertrophy was evident in the right ventricle but so slight as to be negligible. The changes consequent on the induced pneumothorax were on the whole so insignificant that Frank and v. Jagic assert that the field for this method of treatment is much enlarged thereby, as it can be applied without fear of injury to sound parts of the lung even in incipient pulmonary tuberculosis.

Zeitschrift für Kinderheilkunde, Berlin

May, XI, No. 12, pp. 81-190

222 Caloric Requirement for Infant's Nutrition. (Kraftbedarf des Säuglings.) O. Heubner and S. Samelson.
223 Albumin Content of the Blood in Tuberculous Children. B. Salge and E. Nast.
224 Serum of Patients with Rachitis or Tetany Does Not Digest Gland Tissue. (Das Dialysier-Verfahren Abderhaldens bei Rachitis und Tetanie.) H. Beumer.
225 Lack of Uniformity in the Caloric Requirements of Infants. (Klinische Beobachtungen über die calorische Betrachtungsweise der Säuglingsernährung.) E. Mayerhofer and F. Roth.
226 Reaction of Tuberculous Foci in the Skin to Tuberculin. H. Koch and W. Schiller.
227 Volatile Fatty Acids in the Intestine of Normal Infants and Those with Gastro-Intestinal Disturbances and Their Relation to Disturbance in Metabolism. (Pathogenese der Verdauungsstörungen im Säuglingsalter. VIII.) H. Bahrdt and S. McLean.
228 Transverse Striation in the Roentgen Picture in Myxedema. (Bedeutung der Epiphysenschatten beim Myxödem.) F. Goetzky and F. Weihe.

Zeitschrift für Urologie, Berlin

June, VIII, No. 6, pp. 433-528

229 The Limits for Nephrectomy. F. Legueu.
230 Surgical Treatment of Hypospadias. A. Pousson.
231 *Technic for Nephrectomy. (Zwei neue Gesichtspunkte in der Frage der Nephrektomie wegen Nierentuberkulose.) F. Kidd.
232 Diagnosis of Nocturnal Enuresis. A. Alexeieff.
233 Lipoma of the Epididymis. (Lipome des Nebenhodens.) H. Wildbolz.
234 Acute Septic Nephritis. (Niereneiterung.) H. v. Haberer.
235 Separation of Horse-Shoe Kidney into Two Practically Normal Organs. (Fall von Trennung einer Hufeisenniere.) H. Brongersma.
236 Hyperalgetic Zones and Herpes Zoster with Kidney Disease. C. Adrian.

231. **Technic for Nephrectomy.**—Kidd insists that when conditions do not permit catheterization of the ureters and cystoscopy, with a tuberculous process in the kidney, we must not hesitate to open up the pelvis to inspect one or both ureters as they pass through this region. A two-inch incision is ample for the purpose, made over the supposedly sound ureter. The ureter is exposed and palpated between the fingers. It may be necessary to open up both ureters in this way, but the information thus derived is of paramount importance. He operated in six cases on information thus derived, and with the happiest results. In addition Kidd states that the way to ensure healing without suppuration after nephrectomy is to remove the kidney with the perirenal fat and fascia intact.

Zentralblatt für Chirurgie, Leipsic

June 20, XLI, No. 25, pp. 1065-1104

237 When to Operate for Hard Gastric Ulcer. (Zur Indikationsstellung der operativen Behandlung des Ulcus callosum ventriculi.) E. Payr. (Zur operativen Behandlung des Sanduhrmagens infolge Ulcus der kleinen Kurvatur.) A. Wagner.

June 27, No. 26, pp. 1105-1144

238 *Roentgen Ray Helps to Heal Fractures. M. Fraenkel.
239 Treatment of Bilateral Ankylosis of Lower Jaw. (Neues Verfahren zur Beseitigung einer beiderseitigen Ankylosis ossea des Unterkiefergelenkes.) W. Mysch.
240 Plastic Bone Operation after Laminectomy. O. Vulpius.

238. **Stimulating Doses in Roentgenotherapy of Fractures.**—Fraenkel emphasizes the therapeutic importance of the Roentgen rays applied in doses only just strong enough to have a stimulating action. With this *Reiz* dose he has often found it possible to start reabsorption of pleuritic and peritonitic adhesions and start tuberculous glands on the road to a cure. Many tissues and organs as long as they are in a normal condition do not seem to be affected by the Roentgen rays, but when there is already a physiologic irritation then the stimulus from the Roentgen rays or direct sunlight is soon apparent. The effect was remarkable, he states, in eight cases of fracture; callus production and consolidation proceeded with amazing rapidity. The crushed bone was "hanging by a thread" in two cases, both in children, and amputation seemed the only resource, but under the Roentgen exposures consolidation was complete in eight or ten days.

Zentralblatt für Gynäkologie, Leipsic

June 20, XXXVIII, No. 25, pp. 897-928

241 Simplification of Serodiagnosis of Pregnancy. (Vereinfachung der Schwangerschaftsdiagnose nach Abderhalden.) P. Hussy.
242 Classic Cesarean Section: Thirty Cases. A. N. Rachmanow.

June 27, No. 26, pp. 929-960

243 Vicarious or Complementary Menstruation. A. Hirschberg.
244 *The Roentgen Ray in Treatment of Chlorosis. (Die Reizwirkungen der Röntgenstrahlen und ihre therapeutische Verwendung.) M. Fraenkel.

244. **Roentgenotherapy of Chlorosis.**—Fraenkel reports a case of pronounced exophthalmic goiter in a woman of 34 which showed great benefit under fractioned Roentgen exposures of the neck and ovary region. The gradual arrest of menstruation which seems to accompany the onset of Basedow's disease suggests that hypofunctioning on the part of the ovaries opens the portal to exophthalmic goiter, and that means to restore normal functioning to the ovaries will aid in curing the Basedow. His experience in a number of cases of chlorosis with symptoms suggesting mild Basedow and hemoglobin only 48 or 50 per cent. has amply confirmed this assumption, he says. The hemoglobin ran up from 48 to 78, 80 or 85 in five cases of chlorosis in which he had the ovaries exposed, eight sittings, each one-half E.O. with no other treatment.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 23, XXXV, No. 75, pp. 793-800

245 Rat-Bite Disease in Italy: Two Cases. (Sokodu.) W. Zannini.

Riforma Medica, Naples

XXX, Nos. 24-25, pp. 645-700

246 *Adiposis Dolorosa. (Malattia di Dercum.) P. Biffis.
247 *Uremic Polyneuritis. A. Martiri.
248 Granulations in Lymphocytes Taking Blue Stain. (I linfoidi azzurrofili.) F. Radano and G. L. Della-Porta.
249 Surface Tension of Blood Serum after Operations on Adrenals. (La tensione superficiale del siero di sangue in alcuni stati surrenali sperimentali.) V. Giamberardino.

246. **Adiposis Dolorosa.**—Biffis reports a case of Dercum's disease in a woman of 48, previously healthy. The first lipomas were noticed at the age of 38; they were not painful at first. The enlargements are generally symmetrical and when there is no lymphoma to correspond on the other side yet the corresponding spot is painful on pressure. Under the influence of a hot bath the spontaneous pain was arrested for several hours, as also under the influence of aspirin or pyramidon, but the condition as a whole did not seem to be modified by any measures during the two months the patient was under observation. Biffis also relates the complete recovery of another patient, the adiposis dolorosa gradually completely subsiding and with it an alcoholic polyneuritis. Biffis calls attention to this case as sustaining the assumption that Dercum's disease is essentially a neuritis.

247. **Uremic Polyneuritis.**—Martiri's patient was a woman of 66 with parenchymatous nephritis. The symptoms of irritation of the nerves gradually subsided in the course of two months, but the muscles in both legs and arms developed pronounced atrophy. The clinical picture suggested poliomyelitis at first, but this was excluded by the symmetrical distribution of the neuritis, the slow and gradual onset and gradual subsidence, the absence of fibrillary contracture and bulbar symptoms, the curability, and the participation of the optic nerve to a slight extent. There were no symptoms of

uremia otherwise, but the advanced kidney disease suggests a connection between it and the polyneuritis, especially as the latter improved under treatment of the kidney trouble.

Brazil-Medico, Rio de Janeiro

June 1, XXVIII, No. 21, pp. 203-210

250 Experimental Research on Apnea. (Technica para o estudo da apnea.) M. Ozorio.
251 Yellow Fever in Brazil. (A febre amarella em Manaos.) T. Torres. Commenced in No. 18.

Pediatria, St. Petersburg

VI, No. 4, pp. 245-328

252 *Autoserotherapy in Pleurisy. A. S. Artamonoff.
253 Measures for Infant Welfare in Rural Districts. Z. I. Klibanskaya.
254 Favorable Experiences with Albumin Milk in Infant Feeding. (O primienenii bielkovago moloka.) A. G. Rudnik.

252. **Autoserotherapy in Pleurisy.**—Artamonoff applied autoserotherapy in 21 out of 155 cases; in 41 other cases various drugs were used in treatment, and in 93 merely hygiene-dietetic measures. It was impossible to detect any influence from the autoserotherapy on the course of the pleurisy in any of the cases in which there were signs indicating a tuberculous origin. The night sweats and temperature were not modified. The tabulated details show that none of the measures applied seems to have shortened the course of the pleurisy.

Russky Vrach, Petersburg

XIII, No. 9, pp. 289-324

255 *Action of Poisons on the Vessels in the Lungs. V. I. Berezin.
256 *Hemorrhagic Gastritis. (Coccemia chronica permanens.) B. P. Varipaeff.
257 Chemotherapy of Cancer. R. S. Krim.
258 *Frequency of Gall-Stones. E. R. Hesse.
259 *Etiology of Nocturnal Incontinence of Urine. R. M. Fronstein.
260 Leishmaniosis in Russia. N. K. and V. L. Yakimoff and N. I. Shokor. Commenced in No. 8.

255. **Action of Poisons on the Vessels in the Lungs.**—Berezin studied on rabbits the action of poisons on the vessels of the lungs, by Brodie's method; fifty-three experiments were made in all, using epinephrin, nicotin, caffein, calcium chlorid, pilocarpin and atropin. Epinephrin produced a marked vasoconstricting action on the peripheral vessels, but did not act on the pulmonary vessels at all, except that in some it caused vasodilatation. Nicotin, pilocarpin and calcium chlorid produced vasoconstriction of the pulmonary vessels. Caffein caused at first constriction of the pulmonary vessels, followed by dilatation. Atropin did not seem to influence the pulmonary vessels, but if they were previously constricted by pilocarpin or hystamin, atropin put an end to this vasoconstriction.

256. **Hemorrhagic Gastritis.**—Varipaeff found in the blood of an 11-year-old patient with hemorrhagic gastritis a micrococcus in the form of a diplococcus or streptococcus. He is inclined to think that this micrococcus is liable to cause all the severe symptoms of hemorrhagic gastritis, just as it can be caused by any severe infection such as smallpox, typhoid, pyemia, diphtheria, malignant malaria, Hanot's cirrhosis of the liver, etc.

258. **Frequency of Gall-Stones.**—Hesse studied the postmortem material of the large Obuchow Hospital of St. Petersburg in regard to the frequency of gall-stones in that city. The material comprised 17,402 necropsies in the last ten years, and refers mostly to the laboring classes. Only 378 gall-stone cases were found recorded, that is, 2.17 per cent. while from the collective statistics of 19 European and American authors, with 80,802 necropsies, the frequency of gall-stones averaged 5.94 per cent. Males were found less frequently affected than females (0.73 per cent.; 4.75 per cent. for females), and the sixth decade was the most affected. In 84 per cent. of the cases the gall-stones had given no sign of their presence during life. Cancer was found in 10 cases.

259. **Nocturnal Incontinence of Urine.**—Fronstein is of the opinion that for nocturnal incontinence of urine in children and adults there must always be some anatomic lesion as its cause. His investigations disclosed almost invariably balanitis or congenital stricture of the urethra with atony of the bladder as the result, or adenoids. In some cases spina bifida occulta seemed to be responsible. He pleads for more laborious and scientific examination in order to avoid mistakes in the treatment of enuresis.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

LVIII, No. 8, pp. 529-612

261 Spontaneous Rolling up of Eyeball on Attempt at Adduction with Congenital Paralysis of the External Rectus Muscle; Two Cases. (Retractio bulbi.) J. P. A. Hoefnagels.
262 *To Hasten Recovery after Industrial Accidents. (Arbeidsverschaffing aan door een ongeval getroffenen.) J. A. Korteweg.

No. 9, pp. 613-696

263 *Hemorrhages with Certain Internal Diseases. (Over bloedingen bij eenige inwendige ziekten.) P. G. J. Duker.
264 *Hairy Nevis Excised; Two Cases. (Behandeling van moedervlekken.) H. J. Lameris.

262. **To Hasten Recovery after Industrial Accident.**—Korteweg says that the legislation (in the Netherlands) on workman's compensation has had the effect of lengthening the period of convalescence after an industrial accident. It would be far better for the man if he were at work, but employers do not like to hire workmen even temporarily damaged. Korteweg therefore proposes as a makeshift that a full sick pension should be paid to the workman on condition that he works all day in the employ of his employer or the latter's representative, and he outlines ways and means to render this practicable.

263. **Hemorrhages with Internal Diseases.**—Duker explains the tendency to hemorrhage in pernicious and aplastic anemia, typhoid, acute leukemia and relapsing fever by the changes in the blood characteristic of the diseases. This alters the composition of the blood to such an extent that the coagulation process is interfered with.

264. **Treatment of Disfiguring Nevus.**—Lameris gave illustrations of two cases in which he excised the verrucous nevus, scattered with hairs. The defect left was too large to be repaired with Thiersch flaps so the wound was covered with gauze compressing the tissues well. A piece of tinfoil of the proper size was placed on the abdomen and a piece of skin to correspond was cut out of the abdominal wall and transferred to the defect in the face. The photographs taken one and two years afterward show scarcely a trace of the former disfigurement. The patients were girls of 6 and 21.

Hospitalstidende, Copenhagen

June 24, LVII, No. 25, pp. 793-816

265 Salvarsan plus Mercury in Treatment of Syphilis. H. Boas. Commenced in No. 24.

Hygiea, Stockholm

LXXVI, No. 10, pp. 561-624

266 *Exophthalmos. (En orientering i det Basedowska exoftalmusproblemet jämte några ord om den glatta muskulaturen omkring bulben.) C. Hesser.
267 *Urochromogen and Diazo Reactions in Pulmonary Tuberculosis. A. Gullbring.

266. **Exophthalmos.**—Hesser discusses the cause and mechanism of the exophthalmos in Basedow's disease, remarking that none of the theories yet presented explains it adequately. On the basis of his extensive experience as prosector he analyzes each of the possible factors in turn.

267. **Urochromogen and Diazo Reactions in Pulmonary Tuberculosis.**—Gullbring applied both tests in 168 cases of pulmonary tuberculosis; in the total number there were only 2 cases in which the diazo was positive plus negative urochromogen. In 114 cases the findings paralleled each other, both negative in 88 and both positive in 26. In all the others (37 per cent.), urochromogen was positive with negative diazo and in practically all these cases, besides the pulmonary lesions, there were signs of amyloid degeneration of internal organs. The urochromogen test was positive in 90 per cent. of the amyloid cases; the diazo in only 20 per cent. The majority of all the 168 patients were in an advanced stage of the tuberculosis.